

Association Institute

1912-13

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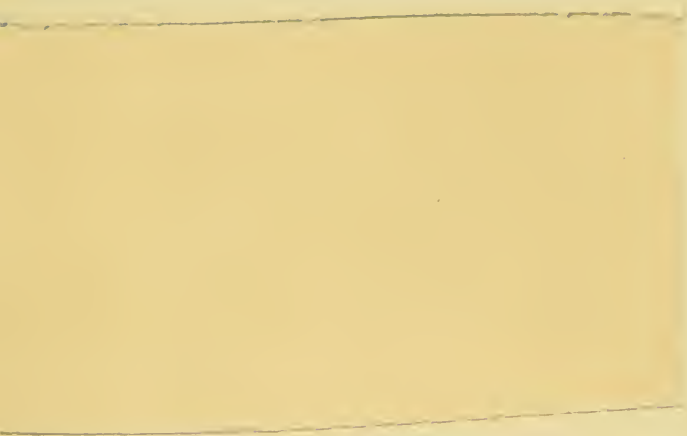
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Association Day School

1912 - 1913		

1912 - 1913

Boston Young Men's Christian Association
Huntington Avenue, Boston, Mass.

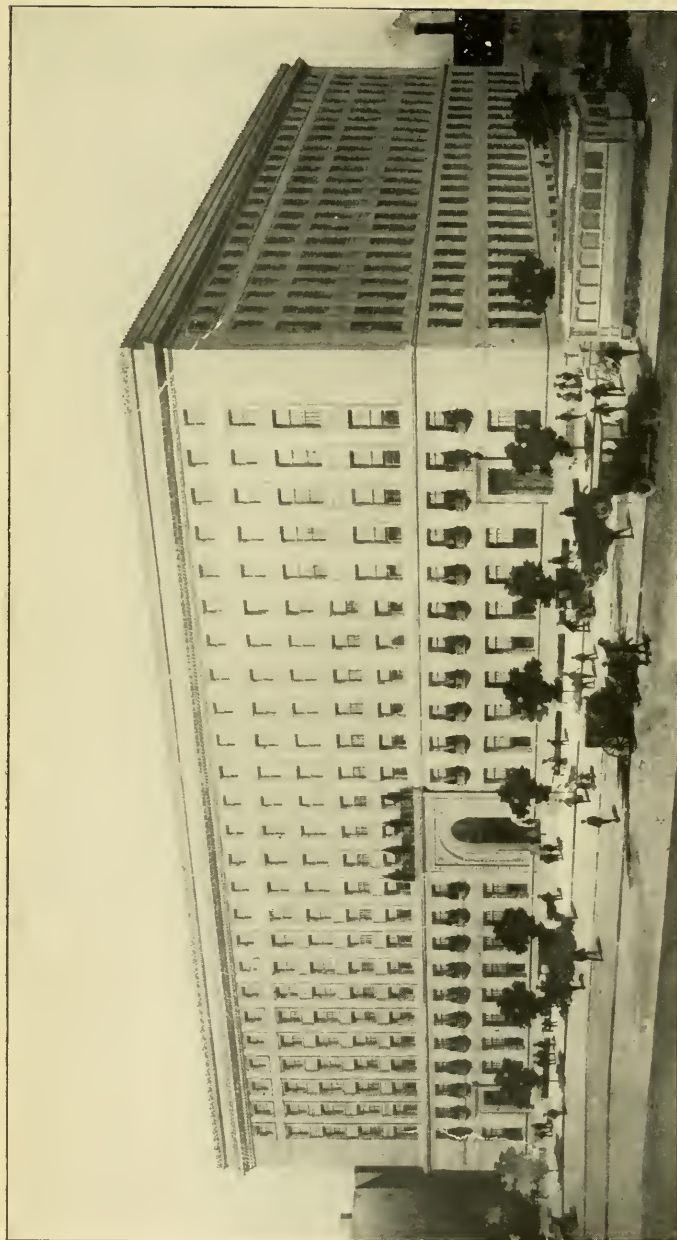


CATALOGUE
of the
Day School
1912-1913

Boston Young Men's Christian Association
Institute

Boston, Massachusetts
Published by the Young Men's Christian Association
1912

968



OUR NEW HOME AFTER OCTOBER 1, 1912

THE NEW HOME OF THE
THE NEW HOME OF THE

Calendar

1912

- Sept. 18, 19, 20. Entrance Examinations
Sept. 26, 27, 28. Registration
Oct. 2. Opening of the Preparatory School
Business School
Electrical School
Grammar School
Oct. 7. Opening of Afternoon Classes for men
Nov. 28, 29. Thanksgiving Recess
Dec. 16, 17. Examinations
Dec. 20. Close of Fall Term
Dec. 20. Christmas Recess begins
Dec. 30. Christmas Recess ends
Dec. 30. Winter Term begins

1913

- March 17, 18. Examinations
March 21. Close of Winter Term
March 21. Spring Recess begins
March 31. Spring Recess ends
March 31. Spring Term begins
June 9, 10. Examinations
June 13. Commencement Day

The opening of the Fall Term of 1912 has been postponed two weeks so that the school may open in the new quarters on Huntington Avenue.



FACULTY

Faculty



IRA A. FLINNER, A.B.
(Harvard University)
Superintendent of Day Schools
German

MARSHALL L. PERRIN, A.M., Ph.D.
(Harvard University) (Goettingen University)
History

JAMES B. TAYLOR, A.B., A.M.
(Harvard University)
English

LUTHER F. ELLIOTT, B.S.
(Bridgewater Normal) (Harvard University)
Principal of Grammar School

JAMES METIVIER, A.B.
(Harvard University)
Latin and French

HERCULES W. GEROMANOS, S.B.
(Massachusetts Institute of Technology)
Dean of Co-operative Engineering School
Chemistry

JOHN INDELKOFER
(Harvard University)
Mathematics

JAMES A. BELL, Ph.B.
(Grove City College)
Supervisor of Study

WILLIAM L. SMITH, S.B.
(Mass. Institute of Technology)
Prin. of Electrical School
Electricity

WILLIAM L. ESTERBERG
Commercial Subjects

N. ELLIOT WILLIS
(Bridgewater Normal)
Grammar School

CHARLES F. HOSMER, A.B.
(Boston University) (Harvard University)
English

FRANK W. WODELL
(Conductor of People's Choral Union)
Voice and Choral Director

Commercial Subjects

JAMES BROUGH
(Certified Art Master)
Freehand Drawing, Industrial Design and Interior Decoration

ARTHUR B. KING, A.B.
(Middlebury College)
Athletic Coach

ALBERT E. GARLAND, M.D., B.P.E.
(Union Medical College) (Springfield College)
Physical Director

JOSEPH A. COOLIDGE, S.B.
(Harvard University)
Physics

Mechanical Drawing

Wood Working and Pattern Making

At the time of going to press our annual election of instructors for the year has not been held, so it is impossible to publish a complete list of the Faculty for 1912-1913.

Officers of Administration



General Administrative Officers

ARTHUR S. JOHNSON, *President*

JACOB P. BATES, *Vice-President*

HAROLD PEABODY, *Recording Secretary*

FRANCIS B. SEARS, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*



Educational Committee

JOHN ROUSMANIERE, *Chairman*

WILLIAM E. MURDOCK

ALBERT H. CURTIS

MORGAN L. COOLEY

GEORGE P. HITCHCOCK



Educational Administrative Officers

FRANK P. SPEARE, *Educational Director*

GALEN D. LIGHT, *Asst. Educ. Director and Bursar*

H. W. GEROMANOS, *Supt. of Evening School System*

IRA A. FLINNER, *Supt. of Day School System*

CHARLES B. GRAY, *Secretary*

Advisory Committee of Day Schools

Representing the Colleges

PROF. PAUL H. HANUS, *Professor of Education, Harvard*

PROF. WILLIAM M. WARREN, *Dean, College of Liberal Arts, B. U.*

EDWARD H. ROCKWELL, *Professor of Structural Eng'g Tufts College*

Representing the Private Schools

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HARLAN P. AMEN, *Principal of Phillips Exeter Academy*

Representing the Public School Systems

FRANK E. SPAULDING, *Supt. of Public Schools, Newton*

CHARLES S. CLARK, *Supt. of Public Schools, Somerville*

WILLIAM ORR, *Deputy Commissioner of Education*

HOBART K. WHITAKER, *Principal of Salem High School*

Representing the Business Interests

FREDERICK P. FISH, *Chairman of State Board of Education*

FRANK A. DAY, *Banker*

JOHN S. LAWRENCE, *Merchant*

The Day School

THE AIM AND SCOPE OF THE SCHOOL

THE school has as its chief object to prepare boys to enter the American Colleges and Scientific Schools, to prepare boys in various branches of Engineering work, to aid boys in selecting a vocation and planning a career and to train boys who must earn a livelihood at the earliest possible time, in some useful and remunerative work.

The Day School is made up of the following schools or departments: Grammar, College Preparatory, High, Electrical, Business and Co-operative Engineering.

The Grammar School offers a two years' course consisting of seventh and eighth grade work as found in the best public schools.

The College Preparatory School offers a four years' course in preparation for colleges and scientific schools.

The High School offers two, three and four year courses for those who do not expect to go to college, but wish to get a general training together with some definite vocational work.

The Electrical School offers a four years' course in Practical electricity, mathematics, mechanical drawing, wood-working, iron working and other subjects directly applicable to the electrician's vocation.

The Business School offers two courses, a one year course for those who have sufficient preliminary training, and a three year course for grammar school graduates.

The Co-operative Engineering School offers four courses. Four years of shop and school work pursued during alternate weeks is required to complete any one of the four courses.

HISTORICAL

The Day School is now in the fourth year of its history. It opened in September, 1909, with an encouraging enrollment of excellent young men from many cities and towns of Eastern

Massachusetts who came with a definite aim in view and a determination to make the most of their opportunity.

The attendance has steadily increased and now there are a large number of boys preparing for New England colleges and technical schools and various lines of business and engineering.

Such good work has been done by the School that it is now on the accredited list of preparatory and high schools whose certificates are accepted by the New England Colleges.

When the school moves to its new quarters this fall on Huntington Avenue where it will be housed in magnificent buildings, the enrollment will no doubt be large. Parents who are interested in sending boys to the school are urged to make arrangements early in the year.

THE SITE

The new buildings are located on Huntington Avenue near the Conservatory of Music, Tufts Medical School, Wentworth Institute, Museum of Fine Arts, Opera House, Symphony Hall and other noted educational institutions.

The Association owns nearly four acres of land which is devoted to the buildings, tennis courts and athletic field. The location is ideal, being accessible from all parts of the city and suburbs, but free from outside influences which distract the attention of students. A large area and broad avenues afford ample opportunity for out-of-door life, the free circulation of air and abundant sunshine.

THE BUILDINGS

On looking at the buildings from the front one gains the impression of a large square structure, 240x200x90, but this is not the case.

There are in reality six buildings, each on its own foundation, and with the exception of the front and west side which are 90 feet high and 58 feet deep, the buildings are comparatively low, connected by corridors and bridges. This arrangement gives exceptionally fine light and air to all the buildings.

The six buildings are as follows: Administration, Association Hall, Educational, Natatorium, Gymnasium and Vocational.

Located in the Administration Building are the lobby, various offices of the Y. M. C. A., the directors' room, offices of the General Secretary, Treasurer, department offices, committee rooms, general library, law library, reading and social rooms. This will be the social center of the plant.

The Association Hall has a seating capacity of nearly 500. A large stage, suitable for theatricals and entertainments of all kinds is provided. The Chapel exercises and lectures of the school are held in this hall.

This building is 196 feet long by 58 feet wide and six stories high. In the basement are located the heating and ventilating system of the entire plant, shops and laboratories. The first floor is taken up by the Boys' Department including game, social and club rooms, and a small assembly hall. On the second, third, and fourth floors are located class rooms, drafting rooms, and laboratories for the various schools. The fifth and sixth floors are used as dormitories.

This building is located between the Association Hall and the Gymnasium and is easily accessible from the locker rooms of the latter. The swimming pool is 75 feet long by 25 feet wide and is under a large skylight admitting floods of light and sunshine. The pool is supplied with filtered water from our own artisan well and heated to the proper temperature by an elaborate system of pipes. Altogether the Natatorium is one of the largest and best equipped of its kind.

This structure is known as the Samuel Johnson Memorial Gymnasium, the funds for which were provided by relatives and friends of the late Samuel Johnson. On the main floor is the gymnasium proper which is well equipped with the most approved apparatus. In the building are handball and squash courts, lockers, six bowling alleys, shower baths, rooms for special exercising, fencing, wrestling, etc., and a running track above which is a visitors' gallery. The gymnasium is so arranged that by a system of sliding partitions it can be divided

into one, two or three separate compartments, making it possible to conduct a number of activities at the same time. Many new features in gymnasium construction and equipment have been introduced.

Vocational Building The vocational building is located directly back of the main group. This is a substantial building of three stories, 150x58, in which are located the woodworking plant, the electrical laboratories, machine shop and lecture halls.

EQUIPMENT

Library The School has excellent library facilities. Besides the large special library of the school, students have access to the general Y. M. C. A. library. The reference department is well equipped with the most recent dictionaries and cyclopedias. The work of the various courses is so planned as to require students to make extended use of the library.

The Laboratories There are three chemical laboratories and one physical laboratory excellently equipped with apparatus used for purposes of demonstration and for individual experiments, in the courses required for admission to representative colleges. The electrical laboratory is equipped with electrical apparatus of all kinds.

Shops A liberal amount of equipment has been provided for the courses in wood working and machine shop practice. The machinery and tools are of commercial type and the output standard.

The School Life

THE school being a part of a large Christian organization is under the most wholesome religious influence, although it is non-sectarian. The students meet regularly for chapel services when some of the noted men of New England give brief addresses.

Discipline The discipline is firm but reasonable. The relations between teachers and students is usually close and friendly, constituting a most important element in the life of a school. Students are expected to cultivate self control, truthfulness and a right sense of honor. The discipline of the school is not adapted to boys who require severe restrictions. *A boy whose influence is felt in any way to be injurious will be removed from the school.*

Reports The progress of students is watched very closely. Instructors make weekly reports to the Principal based on class work. Written tests are frequently given during the term. On the basis of the class work and the written tests, monthly reports are sent to the parents, signed by the Principal. In cases where it is deemed necessary reports are sent more frequently, and an effort is made in other ways to secure the most effective co-operation of the parents with the teachers. When it seems advisable, daily reports of the students' work may be made to the home. Special reports are sent home at the close of each division of the year. The following system of grading is used:

- A 90% to 100%
- B 80% to 90%
- C 70% to 80%
- D 60% to 70%
- F Failure

The passing mark is 60%.



FOOTBALL TEAM 1911

**Hours of
Attendance**

The hours of attendance for the Preparatory School are from 9.00 a. m. to 2.30 p. m. A recess of thirty minutes gives the students an opportunity to eat a light luncheon.

Students may remain after 2.30 to receive special help on their lessons or they may be required to remain after 2.30 to make up back work.

Sessions

The school year is divided into three terms ending respectively at the Christmas and Spring recesses, and at Commencement.

There are short vacations given between the terms.

Classes are organized in a number of subjects at the beginning of each term. This enables one to enter at different times in the year and get work suited to one's needs. Students who have had to drop out of public school because of illness will be able to find classes any time during the year at this school suited to their advancement. Other advantages of this arrangement are that backward students can repeat the work of the class at the end of twelve weeks and that bright students will not be retarded by those not able to do the work.

**The Preparation
of Lessons**

The question of preventing the lowest third of the class from interfering with the progress of the upper two-thirds and at the same time doing full justice to the lowest third, has always been a difficult problem to solve.

Nearly every boy finds difficulty with at least one of his studies. This may be due to a variety of causes—such as a lack of natural aptitude, defective early training, lack of mental concentration, poor memory, laziness or some similar failing. Whatever the cause may be, the case almost always calls for special treatment if substantial progress is to be made. At this school there are two distinct ways in which we overcome these difficulties.

First. By maintaining small classes and doing much individual teaching.

Second. By employing teachers who give their time to the supervision of study. Two teachers are thus employed. One has charge of the students who have vacant periods during the morning session and assists them in their lesson



EDITORIAL STAFF MAROON AND GOLD

preparation, and the other has charge of the afternoon period until five o'clock when he instructs and advises students in the preparation of their work for the following day.

Athletics Facilities are provided for both outdoor and indoor sports. Among these are football, track athletics, basket ball, baseball, swimming, hockey, tennis and handball. The sports and exercises of the boys are under the guidance of the physical director and his assistants. Games are arranged with other high-class preparatory and high school teams. Games are closely supervised at home and when contests take place elsewhere, the teams are accompanied by members of the faculty.

Our teams have had uniformly successful seasons. The baseball team of 1911 won ten out of eleven games scheduled, the football team of 1911 won every game played and did not have its goal line crossed during the season, and the basket ball team won half of the games played.

Musical Clubs The students of the school who are musically inclined have an opportunity of becoming members of the Glee Club and the Orchestra. Musical specialists are employed to take charge of this work and members will find that the time thus spent will not only be pleasant but profitable. The orchestra and Glee Club unite in giving concerts during the year.

Maroon and Gold The students of the Day School publish a paper known as the *Maroon and Gold*. In this paper appear the best compositions of students and accounts of the various activities of the school.

Y. M. C. A. Membership All members of the school become regular members of the Boys' Department or the General Y. M. C. A., depending on whether students are under eighteen years of age or over. Because of such membership students are permitted to enjoy a large number of privileges not generally accorded to private school students. Membership in the Boston Association is recognized in any association in North America, and members when traveling about are eligible to enjoy the privileges of the association in the town or city in which they are sojourning subject to local regulations.



BASKET BALL TEAM 1912

Vocation Department

BUILDING A CAREER

E DUCATORS have awakened to the fact that building a career is as much a matter for careful planning and scientific adaptation as the construction of a house, railroad or any great engineering undertaking. The Declaration of Independence states that "All men are created free and equal." They are free in America, and equal in the sight of God, but so far as powers and weaknesses, likes and dislikes, aptitudes and limitations are concerned, there are no two persons alike.

The schools have, however, obliged these dissimilar persons to subscribe to uniform standards and courses, resulting in great waste of effort, heavy shrinkage and a large percentage of "misfits."

The Call to Service

The graduate or attendant at any school or college, upon seeking employment, is asked by a cold, critical world, two clean-cut, searching questions which must be answered: namely, "What can you do, and how well can you do it?" It is the answer which determines one's opportunities, standing in society, income, comforts and fullness of life.

The Business of the Schools

It should be the business of the schools to enable young people to answer these questions satisfactorily, by giving them sufficient skill in certain lines so that they may look the world in the eye, answer with confidence, and join the onward march, with a reasonable hope of success. The schools should seek to place each student in possession of the accumulated knowledge and experience of his predecessors, actual creative ability, and awaken in him an appreciation of his opportunities and responsibilities.

Present Opportunities

Competition is sharp in all departments of life. There are, however, more and better chances for boys and young men than ever before, but it takes a better equipped, more vigorous and forceful personality to succeed than in past ages.

**Industrial
Economics**

In this age of high speed machinery, rapid processes, division of labor, utilization of by-products, refined methods of manufacture and merchandising, there is no disposition on the part of employers to labor with those who come poorly equipped, and they give the preference to persons who can at once enter upon their duties with intelligence and skill.

**The Old
Ideal**

The old conception of education was a process of intellectual training intended for gentlemen's sons in distinction from the training given to those who were obliged to earn their living. This view has gradually changed until at the present time, it is almost impossible to discover the line of cleavage between cultural subjects and vocational subjects, one merging into the other. The present application includes much of the culture of former years, combined with vocational training sufficient to enable one to assist in the world's work.

**The Selection
of a Vocation**

One of the most important steps in one's life is the choice of a vocation. The wise selection of the business, profession or trade to which one's life is to be devoted, and the development of efficiency in the chosen field, are matters of the deepest moment to young men and to the public. These vital problems should be solved in a careful, scientific way, with due regard to each persons' aptitudes, abilities, ambitions, resources and limitations, and their relations to the conditions of success in different fields of activity.

The Vocation Department seeks to aid young men in testing their aptitudes and abilities, choosing an occupation, selecting the best means of preparing for it, and building up a career of efficiency and success.

**Adaptation
the Key
to Success**

If a boy takes up a line of work to which he is adapted he will achieve far greater success than if he drifts into an industry for which he is not fitted. An occupation out of harmony with the worker's aptitudes and capacities means inefficiency; unenthusiastic, and perhaps distasteful labor and low pay, while an occupation in harmony with the nature of the man, means enthusiasm, love of work and high

economic values—superior product, efficient service and success. If a young man chooses his vocation so that his daily work exercises his best abilities, he will have laid a foundation of success and happiness. But if his daily work does not call forth his abilities and enthusiasm, or he does not find in it sufficient opportunity for exercise and development; if his occupation is merely a means of making a living and the work he loves to do is side-tracked into the evening hours, or pushed out of his life altogether, he will be only a fraction of the man he ought to be.

**The Need
for Expert
Guidance**

Boys and girls are guided to some extent, but finally are allowed to drift in this complex world at will. There is no part of life where the need of guidance is more essential than in the choice of a vocation, adequate preparation for it, and the attainment of efficiency and success. The building of a career is a more difficult problem than the building of a house; yet few ever sit down with pencil and paper and with the advice of an expert to plan a career and deal with the life problem scientifically, as they should deal with the problem of building a house, taking the advice of an architect.

Boys generally drift into this or that employment by chance, proximity or uninformed selection. The high percentage of inefficiency and change in their working forces experienced by many merchants, manufacturers and other employers and the cost it entails in employment expense, waste of training and low-grade service are due largely to the haphazard way in which young men and boys drift into this or that employment, with little or no regard to adaptability, and without adequate preparation, or any definite aim or well-considered plan to ensure efficiency, devotion and development.

No attempt is made to decide for the student what occupation he should choose but every effort is made to help him to come to true conclusions for himself. Information, inspiration and co-operation is the motto.

METHOD OF PROCEDURE

How does the Association Institute cope with the great problem of producing efficient members of society? Every

boy who enters the school who has not selected some vocation must, in connection with his other work, qualify himself for some definite position of usefulness in the world, thereby increasing his appreciation of honest labor, gaining a stability and purpose in life and an ability to earn a living wage whenever it becomes necessary for him to do so.

To be specific, the special training in a vocation enables the boy to earn a living wage should it be necessary for him to drop out of school, and enables him, should he go to college, to earn a large part of his expenses both during the college year and during the vacation periods.

This vocational work in no way interferes with his preparation for college.

Discover The vocational work fits young men to earn a livelihood, but there is another valuable
Inclinations feature of this work. It enables us to discover the natural inclinations of the boys, and to advise them intelligently as to whether their greatest success will probably be in industrial, commercial or scientific pursuits, consequently whether they had better attend college, technical school or enter business life direct.

We aim to discover the boy's aptitudes through the vocational work, but that is only one of the ways we use to assist the boy in his selection of a vocation. We make a special study of each boy through information received from his parents, from his previous teachers and employers and directly from the student.

Parents are The average parent knows nothing about what his boy is doing in school or why he is doing it.
Consulted The teacher has no information as to the boy's peculiarities or points of strength and weakness, and he is at once massed with many others and started on a system of training which, while most admirable, may be wholly unadapted to his temperament or ability, and prove of comparatively little value.

We consult freely with the parents and get from them information which school authorities must have to be most successful in handling boys. By thus co-operating we are able to learn of the peculiarities, aptitudes, limitations, ambitions, good qualities, bad habits and educational experience of every boy.

Teachers and Employers Consulted Previous teachers and employers are often able to give us information of great importance, and consequently we get in touch with them and secure any data that will aid us to help the boy to plan his career intelligently.

Student Consulted Frequent excursions to shops and factories, a study of industries, talks by professional men on professions, and talks by others on different lines of work, together with the systematic study of all vocations give the student ample opportunity to find himself so he can begin a systematic training for a useful vocation.

The student has an opportunity to analyze himself. By means of specially prepared blanks which he fills out we are able to get an insight into his likes and dislikes, employment out of school, his ambitions, social and moral tendencies and other data. With this information and frequent conferences we are able to make a satisfactory diagnosis of the case and advise intelligently.

VOCATIONAL COURSES

The vocational subjects offered during the different years are enumerated and described below:

Vocation 1. *Office Routine and Business Practice.* The work consists of card cataloging, letter filing, letter copying, operation of duplicating machines, simple accounts and office practice.

Vocation 2. *Mechanical Drawing.* Use of drawing instruments, T squares, triangles, etc. Simple projections, nuts and screws, oblique projections, penetration of solids, simple gearing.

Vocation 3. *Machine Drawing.* The aim of the course is to teach the proper way of making the necessary dimensioned drawings for use in practice. The instruction includes: (1) the making of sketches of the parts of the machine from measurements. (2) The detail scale drawing from the sketches and a tracing. (3) An assembly drawing of the machine.

Vocation 4. *Bookkeeping.* Single and double entry bookkeeping.

Vocation 5. *Principles of Ben Pitman Shorthand.* Practice in writing and reading. Shorthand dictation and transcription of notes. Office practice.

Vocation 6. *Typewriting.* The touch method of type-writing; carbon copying, filing, mimeographing, dictation, tabulating. Office practice.

Vocation 7. *Practical Electricity.* The subjects taught in this course are broadly covered by the general titles: wiring methods, batteries, bells and annunciators, spark coils and ignition devices.

Vocation 8. *Practical Electricity.* Among the subjects considered: dynamo machinery, direct current motors, distribution of power, electric lighting, etc.

Vocation 9. *Practical Electricity.* Elements of alternating currents, alternators, transformers, motors, conversion of A. C. to D. C. electrical measurements, etc.

Vocation 10. *Gas Engines.* Names of parts and their uses, theory of explosion, operative principles of the internal combustion engine, various designs, their requirements and care, methods of timing and setting valves; weak compression, causes and remedies; cooling systems with the requirements for care; governor and throttle action; care of ignition system, various methods and parts of equipment, derangements of system and remedies; clutches and types of transmission.

Vocation 11. *Freehand Drawing.* This course is intended to discover artistic ability. The work will consist of drawing from typical models by which students learn a sense of proportion and the principals of perspective. This course is followed either by Vocation 2, Vocation 12 or Vocation 13, depending upon the kind of ability of the student.

Vocation 12. *Industrial Design and Interior Decoration.* The courses in industrial design lead directly into such arts and crafts as wood and stone carving, wrought and bent-iron work, brass and copper work, stained glass, furniture and drapery, interior decoration, book covers, wall paper, fabrics and other allied industrial arts.

Vocation 13. *Illustrating and Cartooning.* Drawing from draped life models to gain knowledge of proportions, anatomy

and the use of the different mediums used in rendering the figure for reproduction. Weekly compositions for illustrations and cartoons are submitted and criticised.

Vocation 14. *Architecture.* A course including the fundamental principles underlying all kinds of mechanical and architectural drawing; geometrical problems, orthographic projections and the five orders of architecture.

Vocation 15. *Woodworking.* Bench work in wood with tools, from drawings made by the student.

Vocation 16. *Wheel-Turning,* and general speed lathe work, from standard designs. Patternmaking.

Vocation 17. *Boat Building.* The construction of sail and power boats and canoes of various designs. This is the most advanced course in wood-working and is preceded by Vocation 2, 15 and 16.

When once a student has discovered a line of work which interests him and for which he has ability he proceeds along that line until he has gained sufficient knowledge to secure and hold a position.

The following are some suggested groups of vocational courses:

Vocation 1, 2, 3

Vocation 1, 5, 6

Vocation 2, 7, 8, 9

Vocation 4

Vocation 11, 12

Vocation 11, 13

Vocation 11, 14

Vocation 2, 15, 16 and 17

The vocational courses 3, 4, 5, 6, 12, 13, 14 require from one to three years to complete, depending upon the ability of the student and the amount of time put in.

The Departments

THE course in English, planned both for students entering college and for students entering business, is designed to instruct them to speak, read and write English with readiness, intelligence and taste. Supplementary reading and reports are required of all classes. Consultations of essays are arranged as often as possible.

ENGLISH

English 1 (5 hrs.) *Applied Grammar.* Punctuation, Dictation, Letter Writing. Goldsmith's *Vicar of Wakefield*; Scott's *Lady of the Lake*; Irving's *Sketch Book*; Longfellow's *Evangeline*, *Courtship of Miles Standish* and *Tales of a Wayside Inn*.

English 2 (5 hrs.) *Rhetoric and Composition.* Oral Expression. Bunyan's *Pilgrim's Progress*; Homer's *Iliad*; Eliot's *Silas Marner*; Stevenson's *Treasure Island*. Much outside reading.

English 3 (3 hrs.) *History of English Literature.* Compositions, oral and written. Addison's *Sir Roger de Coverly Papers*; Tennyson's *Idylls of the King*; Shakespeare's *Merchant of Venice*, *Julius Caesar*.

English 4 (3 hrs.) *History of American Literature.* Compositions, oral and written. *Macbeth*, Milton's *L'Allegro*, *Il Penseroso* and *Comus*, and Burke's *Speech on Conciliation with America*; Macaulay's *Life of Johnson*; Palgrave's *Golden Treasury*.

FRENCH

French 1 (5 hrs.) *Chardenal's Complete French Course:* *Assolant*, *Une Adventure du Célèbre*, *Pierrot*, *Daudet*, *Le Petit Chose*.

French 2 (5 hrs.) *Chardenal's Complete French Course;* *Desnoyers*, *Les Mesaventures de Jean Paul Choppart*; *Dumas*.

Les trois Mousquetaires; Huhns, French Reading for Beginners.

French 3 (3 hrs.) Fraser and Squair, French Grammar; Selections from Maupassant (Schinz), Th. de Banville, Gringoire; Meilhac at Halévy, L'Eté de la Saint Martin; Koren, French Composition.

French 4 (2 hrs.) Fraser and Squair, French Grammar; Balzac, Contes; Selections from Victor Hugo; Loti, Pêcheur d'Islande; Hugo, Hernani; Rostand, Cyrano Bergerac.

LATIN

Latin (5 hrs.) *Beginners' Latin.* First year Latin lessons complete. Easy Latin prose.

Latin 2 (5 hrs.) *Caesar, Sallust and Latin Composition.* Review of beginners' book.

Latin 3 (5 hrs.) *Cicero's Orations against Caliline,* for the Manilian Law, for Archias. Grammar. Composition. Translation at sight.

Latin 4 (5 hrs.) *Virgil's Aeneid.* Translation at sight. Composition.

GERMAN

German 1 (5 hrs.) *Vos' German Grammar.* Gueber's *Marchen und Erzählungen*, 'Till Eulenspiegel.

German 2 (5 hrs.) *German Grammar.* Such reading as Volkmann, *Kleine Geschichten*; Gerstäcker, *Germelshausen*; Storm, *Immensee*; Arnold, *Fritz auf Ferein*.

German 3 (3 hrs.) Wildenbruch, *Das edle Blut*, *Baumbach*, *Die Nonna von Liliencron*, Anno 1870; Meyer, *Das Amulet*, *German Grammar and Composition*.

German 4 (2 hrs.) Keller, *Kleider machen Leute*; Heine, *Die Harzreise*; Schiller, *Wilhelm Tell* or *Die Jungfrau von Orléas*; Lessing, *Minna von Barnhelm*, *Grammar and Composition*.

MATHEMATICS

Mathematics 1 (2 hrs.) *Arithmetic.* A course covering the essentials of practical arithmetic.

Mathematics 2 (5 hrs.) *Algebra I.* This course includes a study of the essential subjects of algebra through quadratic equations.

Mathematics 3 (5 hrs.) *Plane Geometry.* The five books of plane geometry. A large number of originals.

Mathematics 4 (5 hrs.) *Algebra II.* A rigorous course covering the college requirements in elementary algebra.

Mathematics 5 (5 hrs.) *Applied Mathematics.* Practical applications of algebra, geometry, physics, trigonometry, logarithms, slide rule and graphs.

Mathematics 6 (3 hrs.) *Solid Geometry.* The usual theorems in solid and spherical geometry. Stress is laid upon numerical exercises involving mensuration of solid figures.

Mathematics 7 (3 hrs.) *Plane Trigonometry.* Logarithms. The solution of right and oblique triangles. Goniometry.

Mathematics 8 (3 hrs.) *Advanced Algebra.* This course covers the requirements of advanced Algebra for college entrance.

SCIENCE

Science 1 (2 hrs.) A course in *Elementary Science* dealing with the common things of life. The course is arranged as an introduction to science and is intended to give one a broad and helpful view of the physical sciences.

Science 2 (5 hrs.) *Physics.* Recitation and laboratory work covering preparation for college. Constant drill in the solution of problems involving the elementary principles of Physics.

Science 3 (5 hrs.) *Inorganic Chemistry* covering the work of preparation for college; recitations, lectures, demonstrations and laboratory work. Independent work, observation and reasoning are insisted upon.

HISTORY

History 1 (2 hrs.) *English History.* Emphasis placed on the social, religious and political development of England.

History 2 (3 hrs.) *Ancient History.* This course deals

with the history of the ancient world to 800 A. D. Special emphasis is placed on Greek and Roman life, literature, art, and political, social and religious institutions.

History 3 (3 hrs.) *United States History*. This course includes enough of English history to enable one to understand and appreciate American history. Attention given to various forms of government.

History 4 (2 hrs.) *Industrial History*. Social, economic, and industrial history of the United States.

COMMERCIAL STUDIES

Commerce 1 (5 hrs.) *Pennmanship*. Spelling and business papers.

Commerce 2 (5 hrs.) *Commercial Arithmetic* and rapid calculation.

Commerce 3 (2 hrs.) *Commercial Geography*. The products of leading nations; soil and climate; commercial relations, transportation. Emphasis placed on the commercial geography of New England States.

Commerce 4 (5 hrs.) *Bookkeeping*. Single and double entry bookkeeping. Modern Illustrative Bookkeeping.

Commerce 5 (5 hrs.) *Shorthand*. Principles of Ben Pitman Shorthand. Practice in writing and reading. Shorthand dictation and transcription of notes. Office practice.

Commerce 6 (5 hrs.) *Typewriting*. The touch method of typewriting; carbon copying, filing, mimeographing, dictation, tabulating, office practice.

Commerce 7 (2 hrs.) *Economics*. Elements of Economics.

Commerce 8 (2 hrs.) *Industrial History*. Social, economic, and industrial history of the United States.

Commerce 9 (3 hrs.) *Business English*. Numerous forms of letters and business forms. Emphasis is placed on punctuation, details of construction, capitalization and choice of words.

Commerce 10 (2 hrs.) *Commercial Law*. A course covering the elements of business law.

MANUAL ARTS

Manual Arts 1 (4 hrs.) *Wood-Working.* Bench work in wood with tools, from drawings made by the student.

Manual Arts 2 (4 hrs.) *Wood-turning* and general speed lathe work from standard designs; pattermaking.

Manual Arts 3 (4 hrs.) *Boat building.* The construction of sail and power boats and canoes.

MECHANICAL DRAWING

Mechanical Drawing 1 (4 hrs.) Use of drawing instruments, T square, triangles, etc. Simple projections, nuts and screws, oblique projections, penetration of solids, simple gearing.

Mechanical Drawing 2 (4 hrs.) *Machine Drawing.* The aim of this course is to teach the proper way of making the necessary dimensioned drawings for use in practice. The instruction includes: (1) the making of sketches of the parts of the machine from measurements. (2) The detail scale drawing from the sketches and a tracing. (3) An assembly drawing of the machine.

ELECTRICITY

Electricity 1 (2 hrs.) The work given in this course will be of the simplest and most elementary character. It will consist of lectures and recitations covering the general phenomena of Electricity as given in the usual textbooks of Physics, and of practical work which will deal with the running of bell circuits, adjusting of bells, setting up of batteries and similar elementary apparatus.

Electricity 2 (4 hrs.) In this course will be taken up in the lecture and recitation work the principle of the dynamo and motor, their operation, electrical measurements and the principles of installing wiring. The practical work will include setting up of motors and generators, operating them, study of the operation of arc and incandescent lamps and simple problems of wiring.

Electricity 3 (4 hrs.) This course will deal with the principles of alternating currents, effects of inductive and capacity

reactance, the principles of alternating current machinery, generators, induction and synchronous motors, transformers and synchronous converters and for practical work the experimental study of similar apparatus.

While the work of this year will be put in as simple a form as possible it should be understood that at best it is far more difficult than the former courses and is advised only for students who have a marked mathematical capacity.

Electricity 4 (*4 hrs.*) The lecture work of this course will deal with modern electrical theory, principles of distribution for light and power purposes, arrangement of power stations and similar advanced matters.

Laboratory work will be given in connection with the above so far as may be practicable and numerous visits will be made to places where the matters discussed may be studied as applied to actual operation.

PHYSICAL TRAINING (*2 hrs.*)

This department is under a specialist and is considered of the utmost importance.

At the beginning of the Fall Term and again at the end of the season's work, the Director of the Gymnasium gives each student a thorough physical examination, which includes measurements and strength tests. From this examination, a chart is made out for each student, showing size, strength and symmetry in comparison with the normal standard of those of his own age, and indicating the parts of the body which are defective in strength or development.

If for any reason a student is unfit for the general exercises in the class groups, he enters a special class and takes exercises suited to his particular needs.

Physical exercise is required of every student during stated periods of the week. Gymnasium suits are provided by the school.

BIBLE INSTRUCTION (*1 hr.*)

Bible instruction is offered once a week. Attendance is required of every boy. The School is not sectarian. No attempt, therefore, is made to bias the student, the only

objects being to inspire respect for the teachings of the Bible, and to familiarize the student with its contents.

MUSIC (*1 hr.*)

The school has in its faculty a skilled teacher of music who has charge of the chorus and the general musical features of the School. Opportunity is given to those musically inclined to become members of the Glee Club and the orchestra.

Grammar School

IN response to a feeling of many parents that a private school where much individual attention is given is preferable to a public school not offering these advantages, a Grammar School Department offering seventh and eighth grade work is conducted in connection with the Preparatory School. Here with male instructors, small classes, departmental teaching and careful supervision, very satisfactory results have been achieved. Definite vocational and physical training and an opportunity to hear some of the most prominent men of Boston, in addition to the uplifting environment of the Association, afford the very best all-round development.

SESSIONS

The sessions of the Grammar School are held daily except Saturdays and holidays. The school day begins at 9 a. m. and closes at 5 p. m. Recitations are conducted from 9 a. m. until 2 p. m., with a half hour for lunch. The period after two o'clock is taken up with physical exercise and the preparation of the lessons for the following day, the period being divided to allow for one and a half hours for games, athletics and excursions, and the same time for study.

Boys whose parents wish them to leave school at 2 p. m. may do so.

Such an arrangement makes it possible for us to send the boys home ready to enjoy whatever their parents have planned for them. Parents need not then concern themselves about "home work" and they need not feel anxious about how their sons are spending the afternoon.

Grammar School pupils are supervised during the afternoon period both in their exercise and in their preparation of studies for the following day.

We know that excellent results can be produced by holding ourselves entirely responsible for the boy's training in his

studies. We recommend, therefore, that parents place their sons with us for the entire day.

A detailed description of the courses offered in the school follows:

COURSES

Arithmetic. The work in arithmetic is of a practical nature as applied to every-day affairs. Catch problems and laborious processes are avoided, the problems being based on actual experiences in business and industrial life.

English. The work in English is as follows, laying particular emphasis on applied grammar: Montgomery's "Heroic Ballads," Longfellow's "Courtship of Miles Standish," Burrough's "A-Hunting the Deer," Sendder's "Life of Washington," "Stepping Stones to Literature," are studied. Emphasis is placed on memorizing good literature.

Geography. A study is made of the leading countries of the world, their peoples, physical features, climate, products and commerce, particularly our own country; also winds, tides, ocean currents, the seasons and measurement of time. In connection with the class work there will be frequent excursions to factories, docks, etc.

History. This study includes a rapid review of the discovery, settling, early growth and struggle for independence of our country and gives special attention to the political history of the United States, the Civil War, subsequent growth and reconstruction, and present-day problems.

Civics. In the highest grade, a course in civics, of principles of government, is given in connection with history. Much time is devoted to the Constitution of the United States; also state, county, town and city government.

Elementary Science. This course serves as a connecting link between the grammar school science and the more advanced sciences of the Preparatory School. The subjects considered are the elements of physics, chemistry, botany and geology.

Drawing. Students take up both freehand and mechanical drawing. The freehand drawing consists of drawing from

simple objects, of exercises in dark and light and color arrangement. The mechanical drawing is done in connection with the shop work of the grades and consists of simple drawings of articles which the pupil afterwards makes in the shop.

Music. Voice training and part songs; chorus singing. The music is under the direction of one of the best teachers of music in Boston.

Shop Work. The pupils are taught the names and uses of the different instruments used in wood working, and make during the year simple pieces of furniture.

Physical Training. Every student is required to take physical exercise in the gymnasiums of the Association. These exercises vary according to the needs of the pupil.

Vocational Training. A special feature of our Grammar School and absolutely unique, is training in office routine and business practice sufficient to enable the boys to acquire business habits, and be able to earn a living if thrown upon their own resources. This work consists of card cataloging, letter filing, letter copying, operation of duplicating machines, use of the telephone, simple accounts and office routine. The work of the Grammar School, therefore, not only prepares for our several high schools in a most thorough manner, but as before stated, enables the boy if necessary, to secure and hold a position. If employed during the day he may enter our evening classes and go on with his work under the same instruction and system.



BASEBALL TEAM 1912

The Preparatory School

THE Preparatory School incorporates the best features of the best schools. Here the individual is neither embarrassed nor retarded by the class, but is encouraged at all times to do his best, with the inspiration that individual help offers. The wide range of studies and small classes with a large corps of skilled instructors give every pupil an opportunity to pursue the line of study for which he is adapted. The work appeals not only to those fitting for college, but to others who desire to continue their education.

The course of study as prepared fits the student for college as quickly as the ability and zeal of the individual warrant. It covers four years.

Features The following features will commend themselves to parents and students: male teachers, small classes, personal instruction, close supervision, firm but kind discipline, thoroughly modern methods, complete chemical and physical equipment, modern buildings, lectures, practical talks, athletics, gymnastics, social features, vocational training; a faculty of highly trained specialists, representing Harvard, Yale, Boston Universities, Massachusetts Institute of Technology, Bridgewater Normal and other institutions. The teachers have been selected not alone for their high scholarship and broad experience, but for their stalwart Christian character and devotion to the cause of education.

The students are in an atmosphere of study and seriousness of purpose unknown in many schools. Great care is taken in guarding the morals of the boys and keeping them pleasantly and profitably employed. This is accomplished by means of lectures, trips, baseball, football, hockey, gymnasium, work in our shops and laboratories.

**Male
Teachers**

Space does not permit us to dwell upon the various features of the school but we feel we should like to call attention to a statement made by Doctor Kerschensteiner, the great German educator. "The American pupils, particularly boys, are being subjected to harmful softening processes. The case lies partly in the employment of methods which make the pupils' tasks too easy and partly in the lack of men teachers. Boys in the four lower grades may well be left in the hands of women teachers.

"The upper grades should unquestionably be under men, who understand the nature of the boy better than women do. The boy should in many cases be much more firmly and vigorously handled than is possible for a woman. It is doubtless the overfilling of the schools with women teachers that is effeminizing the process of character building and weakening the pupils' respect for authority."

This school has been unusually successful in handling boys because only male teachers are employed.

**Vocational
Work**

Vocational work is required of all students who are undecided about going to college, of all students who are not going to college and are pursuing the high school course, and of all students who are going to college but will have to earn part of their expenses when in college. Students who are preparing for some higher institution and are financially able to complete the work of that institution need not take the vocational courses with us if parents so request, but we recommend that even those students pursue the vocational courses with their regular work.

**College
Expenses**

To show how important the vocational work is for those who go to college and do not have sufficient money to meet the necessary expenses, we need only say that there are approximately 1500 students enrolled in Harvard University who earn part of their expenses. The student who has a specific training has a great advantage. In a recent article in the Boston *Herald*, President Lowell of Harvard said that any young man of ability who could command enough money to pay his expenses at Harvard for the first year could, if he

wished to work, and was trained in some vocation, complete his course at the University and meet all his expenses. He advised young men who expected to work while in college to get a knowledge of shorthand and typewriting. He stated that one student now in Harvard University was earning \$3000 a year doing work in that field. Almost equal opportunities are open to students who are proficient in mechanical drawing. A large number of texts and magazine articles, which are illustrated by simple drawings, are published by educators each year. The drawings are not difficult and the remuneration varies from fifty cents to a dollar an hour.

Courses of Study The courses, as herein outlined, offer a boy the opportunity to prepare for any college or scientific school, and at the same time to get a vocational training which shall so fit him that he may be capable of earning his own livelihood.

Although the courses are so arranged that the ambitious student may in three years prepare for college or scientific school, he is, nevertheless, advised to spend the customary four years in his preparatory work.

The minimum number of recitations per week for each student shall be twenty. A larger number of hours may be taken upon consent of the Principal.

After a student, with the approval of his parents, and under advice of the Principal, has elected to pursue a certain course, he may not change to any other course during the year. At any time, however, when a student fails to do creditable work in his full course, he may be required to drop one or more of his subjects.

At the close of each year students shall make their choice of courses for the following year, which choice shall be adhered to, unless urgent reasons for a change be given to the Principal before the opening of school in the fall.

Entrance Requirements Only physically normal boys of good moral character will be admitted to the school. They may enter either on examination or on presentation of evidence sufficient to show that they have received a preparation equivalent to that regularly given by a grammar school.

Applicants for admission to any class beyond that of the first year shall, in order to qualify for such advanced class, be required to pass examinations in High School subjects equivalent to those taken by the class next below that which they desire to enter.

The outline of courses follows:

COURSES

First Year

Required Courses

Figures denote number of recitations a week

English I	5	Algebra	5
French or German	5	Vocational Work	4

Optional Courses

Latin	5	French	5
Elementary Science	2	German	5
English History	2		

Vocational Courses

Stenography and Typewriting	4	Freehand Drawing	4
Bookkeeping	4	Woodworking	2
Mechanical Drawing	4		

Second Year

Required Courses

English	5	Plane Geometry	5
French or German	5	Vocational Work	4

Optional Courses

Latin	5	Spanish	5
French	5	Ancient History	3
German	5		

Vocational Courses

Mechanical Drawing	4	Bookkeeping	4
Machine Drawing	4	Freehand Drawing	4
Electricity	2	Wood Working	2

Third Year

Required Courses

English	3	Vocational Work	4
Algebra II	5		

Optional Courses

Latin	5	American History	2
French	3 or 5	Industrial History	2
German	3 or 5	Commercial Law	2
Spanish	3	Economics	2
Physics	5	Ancient History	3
Chemistry	5		

Vocational Courses

Machine Drawing	4	Architecture	4
Bookkeeping	4	Wood Working	4
Shorthand and Typewriting	4	Industrial Designing	4
Electricity	4		

Fourth Year

Required Courses

English	3
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Optional Courses

Latin	5	Applied Mathematics	5
German	3 or 5	Review Mathematics	5
French	3 or 5	Solid Geometry	3
Physics	5	Trigonometry	3
Chemistry	5		

Vocational Courses

Boat Building	4	Architecture	4
Electricity	4	Industrial Designing	4
Gas Engines	2	Lettering	2
Illustrating and Cartooning	4		

COURSES OF STUDY

General The work consists of First, Second, Third and Fourth Years and requires for completion
Requirements three or four years, according to the ability and industry of the student.

Assignment to years is based on the number of credits each student has received. Thus First Year is composed of boys having less than 54 credits. (A student is allowed 15 credits for a year's work in a subject of five periods a week); Second Year of those having 54 and less than 110 credits; Third Year of those having 110 and less than 170; Fourth Year, of those having 170 or more.

For graduation from the Academic and the Scientific Courses it is required that the candidate shall have received not less than 225 credits and the work must include, with other subjects, the following: four years of English, three years of mathematics (algebra and geometry), two years of one foreign language, a year of science, and a year of history.

For graduation from the four-year Commercial Course it is required that the candidate shall have received not less than 225 credits, and the work must include, with other subjects, the following: three years of English, two years of mathematics (arithmetic and algebra), two years of one foreign

language, a year of science and a year of history together with the commercial subjects in the field in which the student is specializing.

For graduation from the Electrical Course the same number of credits are required. The work shall include, with other subjects the following; two years of English, four years of mathematics, two years of science, four years of Electricity, one year of mechanical drawing and two years of shop work.

Besides the regular courses enumerated above there are special courses for those who wish a short practical training for some definite field. Information concerning such courses will be given upon request.

AFTERNOON COURSES

Realizing that a large number of men are so employed that they could spend several afternoons a week in study we have arranged to give such persons courses in the Preparatory School suited to their needs and at a time convenient to them.

The sessions will be held on Tuesday and Thursday afternoons from 3.00 to 5.00.

The following courses will be scheduled: English I and II, Arithmetic, Algebra, History, Latin, French, Physiology and Hygiene, Physical Geography and other courses for which there is sufficient demand.

The tuition rate for the afternoon courses is \$15.00 per course for a term of thirty weeks. Those who wish to take any of the above work for a shorter period will be obliged to pay fifty cents per hour.

School of Business

FOREWORD

WE have planned our Day School of Business to meet the needs of two classes of students, the young man and the boy.

The first class is made up of graduates of high schools, and of boys of mature age who have had some experience in the business world. It has been our observation that many boys, upon leaving high school, find that they lack training along some particular line. As soon as they realize this lack, they look around for an opportunity to perfect themselves in some branch of business training. There are also boys who leave school at the end of their grammar school course thinking themselves equipped for work. Later they find that further study would increase their earning capacity. We have arranged the one-year courses for these students, confident that they, with a developed strength and capacity of application, can get a working knowledge of bookkeeping, shorthand or both subjects in one year.

The second class is made up of boys of immature age; those just ready for the high school. For them we have planned the three-year course. This is more general than the one-year courses and the boy completing it will have received the advantage of a high school training along with the added asset of specialization. The graduate of the three-year course should be able to fill satisfactorily a position as stenographer or bookkeeper, the salary being determined by the ability of the student. No boy graduated from this course should find difficulty in obtaining immediate employment.

Boys not graduates of grammar school are not admitted to regular standing in this department. If, however, they can show sufficient qualifications to pursue special courses successfully, they will be allowed to do so. After taking work in this school, if they wish to be admitted to regular standing,

they can do so by making up back work in our Grammar School.

Physical training and attendance at regular exercises of the Day School are required of all students. Exceptions to this will be made only in rare cases and then only with the sanction of the head of the department.

COURSES

One-Year Shorthand

Figures denote recitations per week

Shorthand	5	Business English	3
Typewriting	5	Commercial Geography	2
Penmanship	5		
Spelling			

One-Year Bookkeeping

Bookkeeping	10	Business English	3
Arithmetic	3	Commercial Law	2
Penmanship	5	Commercial Geography	2
Spelling			

One-Year Shorthand-Bookkeeping

Shorthand	5	Penmanship	5
Bookkeeping	5	Spelling	
Typewriting	5	Commercial Law	2
Business English	3		

Three-Year Shorthand-Bookkeeping

First Year

English	5	Penmanship	5
Arithmetic	3	Spelling	
Commercial Geography	2	Shorthand	5
Typewriting	5		

Second Year

Business English	3	Penmanship	5
Bookkeeping	5	Spelling	
Shorthand	3	Commercial Law	2
Typewriting	5	French or German	3

Third Year

Bookkeeping	5	English	3
Shorthand	3	Spanish	5
Typewriting	5	French or German	3

There are no two things in which the ordinary young man or boy, entering an office, is more deficient than in spelling and writing.

With this fact constantly in mind we have planned a combined course of these two subjects in which we

teach the correct position of body and hand, the correct form of letters, ease, rapidity and accuracy in writing words.

**Commercial
Arithmetic**

This is an advanced course in arithmetic in which emphasis is placed on those rules and principles which have been found to be of the most benefit to one employed in a bank or counting house. Drill in simple computations is given to develop dexterity and quickness, after which are taken up fractions, percentage and its applications, commercial discounts, gain and loss, marking goods, commission and brokerage, property insurance, interest, bank discount, partial payments, banker's daily balances, savings-bank accounts, exchange, stocks and bonds, life insurance, storage and partitive proportion and partnership. As a basis of our work we use Moore and Miner's Practical Business Arithmetic and Buch's Rapid Calculation Pad.

English

English of the first and third years of the three-year course is taken up in the High School department of our school. That of the first year consists of theme writing and the study of the easier forms of classical literature. The training in this course is intended to be general and to develop, in the student, a love for standard authors. That of the third year is a continuation of the first year on more advanced theme work and study of the less easy forms of literature. The aim in both these courses is culture.

**Business
English**

As the aim in the preceding course was for culture, in this course it is far practical usefulness. Many students acquire love for the best literature without being able to express themselves in the ordinary forms of English. Here we train the student in the numerous forms of letter writing, such as letters of application, letters of recommendation, letters ordering goods, sending of remittances, and, in fact, all forms of business letters. Emphasis is placed on punctuation, details of construction, capitalization and choice of words.

Bookkeeping

This course comprises all the features necessary for a knowledge of bookkeeping as we see it practised today. The first work is in

becoming familiar with the principles of debit and credit, and in keeping a journal-day book. This is followed by the learning to post, the making of trial balances, closing of ledgers and the making of business and financial statements. The student is made to understand the uses of the different forms of negotiable paper, to make out bills, and to handle in-coming vouchers and money. So far as is practicable he is taught the routine of the ordinary business house and bank. He is taught to use the various books required in the following lines of business: hay and grain, produce and commission, grocery, dry goods, manufacturing and banking. Double entry forms the greater part of the work, but single entry is treated to the extent of the students obtaining a working knowledge of it.

Shorthand There is no field which offers so great opportunities with so little outlay as that of shorthand. The demand for young men stenographers has never been filled, nor is it likely to be at present. Our aim is to put out as many first-class stenographers as possible, confident, in doing so, that we are of a two-fold service. We are supplying a constant demand, and we are starting young men in work that is not only pleasant and profitable in itself, but it can be made a stepping-stone to the best positions in the business world. The Ben Pitman system of shorthand is taught, as we have found that no system offers a wider field for advancement than does this. Students vary in their ability to master the subject. Some spend two or three years studying it, along with other work, while others acquire a working knowledge of it in two or three months. The value of the course is increased by means of the phonograph, the student being able to get a larger amount of dictation than is ordinarily possible.

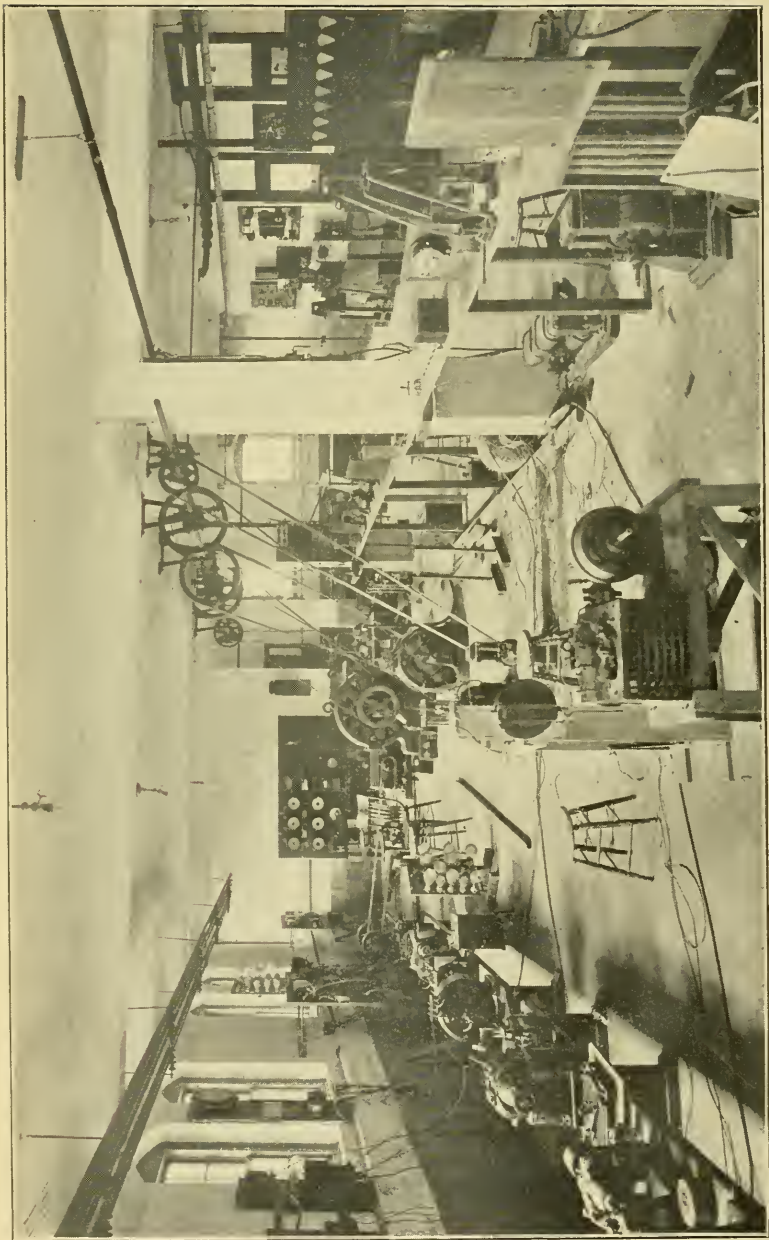
Typewriting Touch typewriting, the most approved method, is employed, the student being taught by means of blank keys and blind-folding. By this mode of writing one is enabled to obtain both maximum accuracy and maximum speed. Preliminary work consists of simple finger exercises to develop dexterity and familiarity with the keyboard. This is followed by thorough handling of business correspondence and law papers. The

student is made to understand the different parts of the machines, and he is required to take such care of the typewriter as he will need to do later in actual office practice. The school is equipped with the latest models of the standard typewriters.

Commercial Geography This course consists of the study of commercial conditions, the products of the different countries—special attention being given to those of this country and its possessions, and the places of the different countries in commerce. Natural factors in commerce will be brought out and due weight given to cause and effect.

Office Routine One of the distinguishing features of our School of Business will be the attention given to office routine and business practice. Our object is to fit students so completely that they may enter an office well equipped and capable of rapid advancement. We have ample equipment consisting of letter-presses, filing devices, card catalog systems, duplicating machines, etc., a knowledge of which will add materially to the student's value in business life.

Spanish, French and German Spanish is offered that the student may qualify successfully for positions in our insular possessions, Mexico and South America. Our aim is to give training both in talking and writing the language.



ELECTRICAL SCHOOL LABORATORY

The Electrical School

THIS School has been established to meet the needs of a large number of persons who wish to prepare themselves to become assistants to the men who graduate from the great Electrical Schools of the country.

The course is of such a character that a grammar school graduate, or a boy in the first or the second year of high school may take it and fit himself in four years to become an Electrician.

The work has been so planned that a student will get in addition to his knowledge of Electricity a general training in English, mathematics and science besides a large number of closely related subjects.

An outline of the four-year course follows:

ELECTRICAL COURSES

First Year

Algebra and Arithmetic (5)	Elementary Science (2)
English (5)	Electricity (2)
Mechanical Drawing (4)	Shop work (2)

Second Year

Algebra (5)	Electricity (4)
Geometry (5)	Shop work (4)
Mechanical Drawing (4)	Business English (3)
Industrial History (2)	
Electives: French (5) or German (5)	

Third Year

Physics (5)	Electricity (4)
Engineering Mathematics (5)	German or French (5)
Machine Drawing (4)	Shop Work (4)

Fourth Year

Advanced Electricity (4)	German or French (5)
Chemistry (5)	Advanced Machine Drawing (4)
Shop Work (4)	Economics (3)
Gas Engines (2)	

The work in Electricity is described at some length in the following pages. The other subjects have been described in the section marked "Departments."

COURSE IN DETAIL

General Electricity. Simplest electric phenomena. Opposite charges, early electric theories. The Electron Theory. Conductor and insulator. Field of force. Law of inverse squares. Influence. Electrophorus. Influence machines. Capacity and condensers.

Current flow. Electrolysis. Electrolytic dissociation. Voltaic battery. Modern theory of action. Electromotive force. Polarization. Reversible and irreversible cells. Types of batteries. The storage cell. Ohms Law, resistance. Divided circuits, etc. Heating effects of current.

Electric transfer of energy. The Joule and Watt.

The Magnet. Lode-stone. Formation of Magnets. Permanent and temporary magnets. Field of magnet, magnetic lines of force. Magnetic induction. The earth magnetized. How it becomes so. The electron current in the atom. Compass and variations. Dip. Theory of magnetism.

Oersted's discovery. Magnetic effects of a current. Field surrounding a current. Mutual action of current and magnet. Mutual action of two currents. Electro magnets. Electro-magnetic induction. Lenz's law.

Light, electric and heat radiation compared. Hertz's experiments, Maxwell's theory. Etheric waves. Radiant energy.

Electrical Measurements. Necessity of measurement. What measurement is. Making of measurements. Direct and indirect measurements. Accuracy. Precision. Sources of error. Constant and variable errors. Laws of deviations. Curve of error. Average deviation. Huge error. Mistake. Representation of results. Analytical and graphical methods. Curve plotting. Choice of scales. Interpretation of curves. Interpolation and extrapolation.

Units. Legal electrical units. Working standards. Instruments: Ampere and Volt meters. Wattmeters. Bridges, etc. Sensitive galvanometers. Mirror and scale. Shunts, and other devices.

Methods of measurement. Current. Electromotive force. Resistance. Power. Capacity. Magnetic induction. Permeability, etc.

Calibration of instruments. Complete and detailed example of correct experimentation.

Principles of Wiring, etc. Preliminary considerations. Fire risk. National code. Examples of electricity caused fires. Systems of distribution. Two-wire; three-wire; multi-wire. Tree and pocket wiring. Drop in the line. Calculation of line loss. Size of wire for a given potential drop. Uniform feeder drop. Circular mils.

Systems of Wiring. Cleat Moulding. Rigid and flexible conduit. Knob and tube.

Wiring a house. Preliminary. Laying out circuits. Mains. Service switch. Cutout and meter. Switches. Control of lamps from different points. Sizes of Wire. Carrying capacity. Tests.

National Code; its rules, their reasons for being, inspection, etc., in detail.

Wiring fittings, appliances, switches, cutouts, fuses, cabinets, outlet boxes. Freak appliances, etc.

Note. In this course it is hoped to have several special lectures by inspectors, insurance men, etc.

Dynamo Machinery. Magnetic field. Flux density. Magneto-Electric induction. Magnetic permeability. Magnetomotive force. Reluctance. Magnetization curves. Air-gap. Joints in circuit. Heat effects. Residual magnetism. Cycles of magnetization. Hysteresis.

The Armature. Ring, pole, drum, disc. Field magnet excitation. Magneto. Series. Shunt and compound dynamos. Cross magnetization, sparking. Demagnetization. Cross reluctance. Cross compounding. Concentration of field. Self-compensating armatures. Eddy currents. Forms of field magnets. Magnetic leakage. Exciting ampere turns. Space factor. Armature windings. Commutator and brushes. Magnet yokes. Field poles. Field windings. Armature core bodies. Commutator construction. Characteristic curves. Efficiency curves. D. C. generators. Methods of driving representative generators.

Direct Current Motors. Fundamental principles. Motors and generators. Counter E. M. F., motor equation. Distor-

tion of field. Efficiency. Losses. Motor laws. Speed and torque. Windings. Series, shunt and compound motors on constant potential circuits. Relations of torque, speed field strength, armature conductors, lead, etc. Starting, stopping, reversing, series parallel control. Railway motors.

Distribution of Power. Power stations. Location. Choice of generating and transmission systems. Steam engines reciprocating and turbine. Water wheels. Generators. Storage batteries. Auxiliary apparatus. Switchboards. Switchboard Equipment. Conductors. Wire. Distribution systems. Feeders and mains. Multiple wire systems. Pressure regulation. Overhead and under-ground systems. National Code rules. Statutory and Municipal regulations.

Sub-course on Management of Dynamos in connection with the laboratory work.

Electric Lighting. Historical. Incandescent lamps. Filaments. Voltage. Candle power. Arc lamps. High efficiency lamps. Illumination. Optical principles involved. Shades and reflectors. Photometrical determinations. House lighting. Halls, shops, etc. Street lighting.

Elements of Alternating Currents. Definitions. Armature cores and windings. Cycle. Frequency Period. Advantages and disadvantages of alternating currents. Characteristic features of alternating currents. Comparison of power. Ohms and Joules laws as applied to D. C. and A. C. work. Kirchoff's laws. Graphic representation of alternating waves. Form factor. Instantaneous and average power delivered. Synchronism. Phase difference. Inductance. Capacity. Reactance. Impedance. Resonance.

LABORATORY COURSES

Electrical Measurements. Experiments on—Resistance by substitution. Resistance by Ohms law. Resistance by direct deflection. Wheatstone Bridge. Measurement of Insulation resistance. Slide wire bridge. Variation of resistance with temperature. Specific resistance. Measurement of current by Electrolysis. Calibration of ammeter. Calibration of voltmeter by potentiometer. Power measurement

by calormeter. Comparison of electrostatic capacities. Shunt method of measuring current. Magnetization of iron.

Auxiliary Apparatus. Study of circuit breakers. Test and action of fuses. Study of low tension ground detectors. Test of a lifting magnet. Test of a tractive magnet. Calibration of integrating Wattmeter. Test of meter torque. Study of constant-potential arc lamps. Study of incandescent lamps. Test of Wright demand meter. Study of non-protected motor starter. Of a No-voltage release starter. Of an Over-load release starter. Of a Distant-control starter. Of a fully protected motor starter and speed controller. Study of series parallel control.

Construction and Operation of D. C. Dynamos. Study of machine connections. Adjustment of brushes. Effect of reversed rotation, etc. Reversal of motor. Shop testing. Measurement of cold resistance. Mechanical inspection. Cold regulation. Sparking test. Temperature rise. Locating faults. Operating Shunt generators in parallel. Operating compound generators in parallel. Three wire distribution. Same with balancing set. Three wire generator. Study of Booster action.

Elements of Dynamo Testing. Testing of primary and secondary batteries. Measurement of armature circuit resistance. Relation between speed and voltage in an unloaded separately excited generator. Characteristic curves of a Separate,—Shunt,—Series,—Compound Generator. Static torque of Series and Shunt motors on Constant potential circuit. Relation between speed and voltage at the terminals of shunt motor with constant field. Change of speed of same with field excitation, armature volts constant. Speed variation of same with variable terminal voltage. Load characteristics of a Shunt motor. Same of a Series motor on Constant potential. Of a Compound motor on Constant potential. The Stray power method of testing. Use of Calibrated motor as a Transmission dynamometer. Electrical supply of losses at Constant potential. Testing of railway motors.

LABORATORY

The laboratory is well equipped with apparatus and possesses a satisfactory set of instruments for teaching the principles of measurements including Slide-wire and Cary-Foster Bridges, Laboratory Bridge, Portable testing set Potentiometer, apparatus for testing insulation, test meters, large and varied equipment of D. C. Weston instruments ranging from 1 to 100 Amperes, and 3 to 750 Volts, etc.

It possesses also six A. C. Ammeters with current transformers, together with Voltmeters with potential transformers, as well as three single phase integrating watt meters, and this season is purchasing a number of General Electric Iron-clad Wattmeters and a pair of high torque Thomson Induction Test Meters.

There are among machines:

A pair of specially made, matched machines, arranged to run either as single-phase, two-phase or three-phase generators or motors, as well as synchronous transformers, double current generators or, on the D. C. side as shunt, series or compound generators or motors, and also as three wire generators on the Dobrovolsky plan.

Two specially matched, 181 horse, series motors fitted to a K-10 G.E. series-parallel controller, with brakes, etc., for efficiency and other tests.

A 60-Horse power 60 cycle single phase 500 volt alternator, a smaller ($7\frac{1}{2}$ -Horse power) special G. E. 60 cycle 250 volt alternator, revolving field, tapped for either 1, 2, 3, 6 or 12 phase currents and supplied with special motors changing it into a synchronous, or induction motor of three types as well as into a frequency changer, a Thomson-Houston Inclined Coil, compound generator, a 25-Horse power Westinghouse Compound generator, which can also be operated as a motor, and fifteen other direct and alternating motors of different types and sizes, these being used mostly for individual work.

The equipment in the line of auxiliary apparatus, motor starters, circuit breakers, meters, etc., is also very complete and the remaining lacunae are being rapidly filled up.

METHOD OF WORK

The object of all the laboratory work of the Electrical School is to have the student expand the knowledge he has received from the lectures and reading by learning through his finger-tips; to have him absolutely handle the object under discussion; to adjust, measure and test electrical machinery; to become familiar with dynamos, motors, electric wires, and in fact to get an intelligent conception of the entire problem from a practical standpoint. In addition to the foregoing, however, we aim to supply sufficient theory so that the student may know why certain things are done, enabling him thereby to become a skilful operator and one capable of growth and development.

RESULTS

Good work in this school depends, of course, first of all, upon the intelligence and application of the student. When a student is in earnest he can acquire an intelligent conception and a working knowledge which has a direct and absolute commercial value. He will be head and shoulders above the inexperienced man who endeavors to enter these fields. He will be alert and active mentally, and sufficiently well trained so that he may, with the aid of good text-books, follow along this line into the higher branches of the art.

The Co-operative Engineering School

THE aim of this School is to give the student a thorough technical training along Engineering lines, and at the same time to give him the practical experience in his profession which will prove invaluable in his life work. To this end, the students work in pairs, and alternate between the school and their practical employment on alternate weeks. Thus one student will always be at the school, and one at work, but they will occupy either place continuously only for one week each, at the end of that time being relieved by his mate. Thus a man taking Civil Engineering gets the theory of the work at school, and then can go out and apply that theory in the work in Civil Engineering at which he is employed during his weeks of practical work.

The earnings from the outside employment are sufficient to defray the expenses of tuition and supplies, besides giving from fifty to seventy-five dollars a year more for incidental expenses, as car fare, etc., etc.

The practical employment is secured through the school, with which certain firms have agreed to co-operate and give employment to our students.

This plan has been in operation for three years and has proved very desirable from both the employers' and the students' standpoints, since it fits men for their employers' needs and also gives them a training that can lead only to rapid advancement in their profession.

Four year courses are given in Civil, Mechanical, Electrical and Chemical Engineering which are open to high school graduates or the equivalent. Admission is by examination in the following subjects:—Elementary Algebra, Elementary Geometry, Physics, Mechanical Drawing and English.

In case a student is unable to carry the engineering studies, because of insufficient preparation, he is put in our Preparatory School where he is given a special course fitting him for the engineering work.

Full details of the plan may be had from our "Bulletin of the Co-operative Engineering School."

Rates of Tuition

GRAMMAR SCHOOL

THE rate of tuition in the Grammar School is \$100 per year. The first payment, a registration fee of \$10.00 must be made before a student will be admitted to the class; the second, \$50 is payable on or before the second Monday after the student enters; and the final payment, \$40 on or before February 1. Students who remain from 2 p. m. until 5 p. m. for supervised athletics and study pay an additional \$25.00.

PREPARATORY SCHOOL

The rate of tuition in the Preparatory School is \$150 per year. The first payment, a registration fee of \$10, must be made before a student will be admitted to any classes; the second, \$80, is payable on or before the second Monday after the student enters; and the final payment, \$60, on or before February 1. A laboratory fee of \$5 is required of those taking courses in chemistry.

Rates for Single Courses

One hour per week	\$20 and \$2 Membership
Two " "	\$25 " " "
Three " "	\$30 " " "
Four " "	\$35 " " "
Five " "	\$40 " " "
Laboratory Courses	\$45 " " "

● Mechanical Drawing is counted as a three-hour course.

SCHOOL OF BUSINESS

The rate of tuition in the School of Business is \$125 per year. The first payment, a registration fee of \$10 must be made before a student will be admitted to any of the classes; the second \$65, is payable on or before the second Monday

after the student enters; and the final payment, \$50, on or before February 1.

SCHOOL OF CO-OPERATIVE ENGINEERING

The rate of tuition in the School of Co-operative Engineering is \$110 per year; \$10 payable at the time of registration; \$10 before receiving supplies, \$40 December 1, \$30, February 1 and \$20 April 1.

ELECTRICAL SCHOOL

The rate for the Electrical School is \$150. The first payment a registration fee of \$10 must be made before the student will be admitted to classes: the second, \$80, is payable on or before the second Monday after the student enters; and the final payment, \$60 on or before February 1.

WHAT INCLUDED

The tuition fee for each school includes besides instruction membership in the Y. M. C. A. either in the Boys' Department or in the Men's Department according to whether the boy is under eighteen years or over eighteen years of age; running supplies, such as ink, paper and pencils; the use of text books during the time the students are enrolled; athletics and gymnasium suit.

BOOKS

A deposit of \$2 is made by the student before books and supplies are issued. This money is refunded, at the close of the year, or when the student leaves the school, when the books and other material are returned.

REGISTRATION FEE

When the registration fee is once paid it will not be refunded.

FORMER STUDENTS

The annual tuition for members attending the Day School during the school year 1911 and 1912 will continue to be \$80 for Grammar School students, \$100 for Co-operative Engineering students, \$125 for Preparatory School students, Electrical School students, and Business School students.

THE SCHOOL COMMITTEE OF THE CITY OF BOSTON
OFFICE OF THE SUPERINTENDENT
MASON STREET

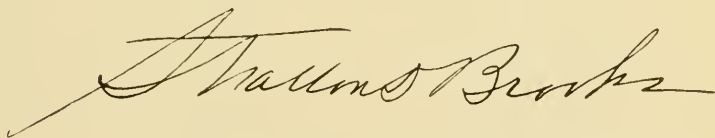
April 16, 1912.

Mr. Frank P. Speare,
10 Ashburton Place,
Boston, Mass.

Dear Sir:

The information I have concerning the Y. M. C. A. Day School leads me to believe that it is performing an excellent service in a most admirable way. I have not the slightest doubt that it should be heartily recommended to parents and pupils.

Sincerely yours,

A handwritten signature in cursive script, reading "Thomas Brooks". The signature is written in dark ink and is positioned above the printed name of the Superintendent.

Superintendent of Public Schools.

Day School Students

College Preparatory School

Albert, Bernard	Chelsea
Baker, Alfred	Allston
Bishop, George L.	Ashmont
Blood, Robert E.	Cambridge
Brackett, Harold	
Brooks, Norman E.	W. Medford
Calabro, John	Boston
Cobb, Earland S.	Melrose
Coleman, Roscoe C.	Boston
Cook, Walter M.	Somerville
Dexter, Arthur L.	W. Newton
Epstein, Nathan	Winthrop
Farhi, Joseph	Dorchester
Ford, L. M.	Cambridge
Ford, Thomas H.	Medford
Goodwin, Horace F.	Melrose Highlands
Green, George D.	Revere
Hartley, Thomas I.	Dorchester
Horton, Walter A.	E. Somerville
Jones, F. W.	Winthrop
Kirlin, William Walter	Arlington
Landerman, John D.	Roxbury
Lowe, Francis J.	Boston
McDonough, Charles	Millis
Malkasian, Nishan	Boston
Martin, Philip L.	Jamaica Plain
Mastrangelo, Charles P.	Boston
Minot, John A.	Charlestown
Muscanto, S.	Boston
Newcomb, G. M.	Malden
Odiorne, K. W.	Wakefield
Peabody, Elberton E.	Boston
Price, Charles W.	Stonham
Rockwood, Walter G.	W. Medford
Shannon, Charles W.	Chelsea
Spaulding, H. C.	Winchester
Spears, Everett E.	Roxbury
Stearns, Howard Y.	Somerville
Steele, Alfred	Gloucester
Stewart, Harold A.	Dorchester
Todd, Joseph C.	So. Boston
Trowbridge, Joseph C., Jr.	Stoughton
Vortisch, Herbert W.	Dorchester
Ward, Fred A.	Quincy
Watson, Frederick A.	Boston
Wetherbee, Warren E.	Waltham
White, Thomas C.	Malden
Wong, T. Goon	Boston
Zinszer, Harry E.	Allentown, Pa.

Grammar School

Arthur, Clifford J.	South Boston
Berry, Emmons	Winthrop
Bonneau, Frank H.	Boston
Bossom, Charles	Revere
Foster, Kendell	Boston
Harding, Austin L.	East Boston
Harnish, William	Braintree
Kiggen, J. Ewen	Hyde Park
Kewer, Gordon	Waverly
Moore, Charles D.	Arlington
Shaw, Kenneth	Boston
Swan, Willard	Clifftondale
Thompson, David B.	Mattapan
Wong, A. C. J.	Boston

Electrical School

Cushman, Charles N.	Millis
Glassman, Frank	Roxbury
Goldsmith, Lloyd	Revere
Langill, Henry P.	Holliston
Maliff, William F.	South Boston
Manny, Charles	Roxbury
Moyle, John H.	Quincy
Perkins, Fred W.	Waltham
Qualey, J. Emerson	Quincy
Rand, Joseph C.	Dorchester
Snyder, Waldron L.	Walpole
Taylor, Harold W.	Waltham
Tyler, Samuel F.	Newton

Business School

Allison, A. H.	Dorchester
Brown, Frank L.	Cambridge
Chapin, Harry G.	Maynard
Conroy, Philip E.	
Durning, F. L.	Jamaica Plain
Gale, Waldo S.	Boston
Goodwin, Wilfred	Dorchester
Gould, Orrin P.	Neponset
Griffin, Edmund	Watertown
Hussey, Frank S.	Winthrop
Kelly, Arthur J.	Dorchester
Kinstead, Donald E.	Waverly
Lewis, Darrel A.	Roxbury
Lundquist, Arthur	Dorchester
McCaddin, John	Boston
Mahoney, Charles	Roxbury
Morgan, Edward	Boston
Morse, Eugene	Roxbury
Nason, James R., Jr.	
Rico, Arthur R.	Roxbury
Sacco, Joseph S.	East Boston
Sargent, Lester J.	Winthrop
Scalley, John H.	Woburn
Scheinfeldt, Joseph H.	Roxbury

Silverman, Samuel M.
 Sinnett, John J.
 Smith, C. Wesley
 Smith, Eldridge F.
 Staples, C. A.
 Steiner, Waldo H.
 Thoner, Carl T.
 Thrasher, Herbert C.
 Vezina, E. H.
 Walton, George H.
 Waugh, Harry
 Wilson, D. Robert

Boston
 Roxbury
 Cambridge
 Winthrop
 Roxbury
 E. Dedham
 Boston
 Attleboro
 Woburn
 Boston
 Dorchester
 Waverly

Special

Aisner, M. M.
 Beatty, John F.
 Bernhard, B. S.
 Ginn, R. L.
 Holland, Maurice J.
 Leonard, Earl
 Norris, J. R. C.
 Swanson, Rudolph S.
 Thrasher, Herbert C.

Boston
 Brighton
 Roxbury
 Somerville
 Brookline
 W. Somerville
 Revere
 Woburn
 Attleboro

Co-operative Engineering School

Batease, Harry
 Berquist, John C.
 Berry, Fred A.
 Blume, Hyman
 Brown, David M.
 Buck, Robert E.
 Carsley, Hayward
 Cooper, Alton R.
 Curtis, Joseph W.
 Cutler, J. A.
 Davis, Reuel L.
 Driscoll, D. Vincent
 Drown, Winthrop E.
 Ellis, Paul M.
 Faulkner, John J.
 Field, Geo. A. Field, Jr.
 Fielder, Ross L.
 Foster, Frederick S.
 Girard, Leon F.
 Gove, Leland H.
 Gurney, Harold S.
 Hadley, Earl
 Hale, Harold F.
 Hannay, Edward A.
 Harris, Horace
 Haynes, Erle S.
 Hill, Ralph J.
 Jones, Adelbert L.
 Jones, Frank H.
 Kalunian, Karekin
 Keene, Stephen, Jr.
 Lambert, William J.

Boston
 W. Somerville
 Somerville
 Boston
 Acord
 No. Wilmington
 Swampscott
 Medway
 Cliftondale
 Holliston
 Beverly Farms
 Malden
 Dorchester
 Everett
 Boston
 Boston
 Beverly
 Dorchester
 No. Cambridge
 Randolph
 Natick
 Wakefield
 Lynn
 Roslindale
 Shirley
 Dorchester
 Littleton
 Melrose
 Revere
 Cambridge
 Malden
 Boston

Leighton, John R.
 Leland, Ralph H.
 Lynch, Charles L.
 Mekler, David L.
 Moody, Charles B.
 Moody, Edmund G.
 Myrer, Raymond L.
 Naiman, Solomon
 Norton, John G.
 Peacock, Robert B.
 Pinksohn, Clarence N.
 Putnam, Harold W.
 Riseman, Jay B.
 Roberts, Paul H.
 Robinson, Roy D.
 Roche, Gordon S.
 Rosen, Benjamin
 Sawyer, Gilbert
 Schroeder, Carl F.
 Shapiro, Henry
 Siple, Frank
 Slane, Frank
 Slotnick, Hyman
 Stackpole, Burton
 Stark, Harry W., Jr.
 Steele, Harold H.
 Strout, Winfred M.
 Sullivan, Robert J.
 Webber, Fred E.
 Wentworth, Warren H.
 Wood, Lawrence
 Woodward, Oscar L.
 Wright, Ashley L.
 Young, Russell O.

Everett
 Holliston
 Roxbury
 Dorchester
 Boston
 Lynn
 Holliston
 Dorchester
 Dorchester
 Somerville
 Allston
 Lynn
 Everett
 Norwood
 Malden
 Dorchester
 Boston
 Malden
 Wollaston
 Somerville
 Dorchester
 Dorchester
 Everett
 South Weymouth
 So. Boston
 Marblehead
 Malden
 Cambridge
 South Boston
 Chelsea
 Beverly Farms
 South Boston
 Natick
 Jamaica Plain

General Departments

DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B. P. E. Director

The Physical Department is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative, Hygienic, and Educational Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts. Basket ball, baseball and athletics.

DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced development and attain a spiritual foundation for successful life work the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups, and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter.)

DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following social features.

A Newly Equipped Game Room. The Popular Novel Club.

The Association Congress. The Land and Water Club.

Popular Social Evenings.

DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

The Employment Department, is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

BOYS' DEPARTMENT

DON S. GATES, A. B., City Secretary

The physical, social, employment, and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Membership dues for the boys range from one to six dollars according to the privileges desired. Boys' work is also organized in the North End, the South End and Roxbury.

Courses

COURSES IN THE DAY SCHOOLS

Alternating Current Machinery	German I
Advanced Structures	German II
Algebra I	German III
Algebra II	German IV
Arithmetic	Greek
Arithmetic, Commercial	History, American
Applied Mechanics	Hydraulic Engineering
Automobile Operator's Road Course	History, Ancient
Automobile Operator's Lecture Course	Heat, Engineering
Automobile Operator's Laboratory Course	Hydraulic Motors
Automobile Garage Course	Industrial Design
Automobile Machine Shop Course	Industrial Chemistry
Bookkeeping, Advanced	Latin I
Bookkeeping, Elementary	Latin II
Bridge Design	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Lettering
Drawing, Freehand	Machine Drawing
Drawing, Mechanical	Materials
Dynamics of Machines	Mathematics, Engineering
Elementary Science	Mechanism Design
Electricity I	Metallurgy of Iron
Electricity II	Penmanship
Electricity III	Physics
Electric Light and Transmission of Power.	Public Speaking
English I	Power Plant Design
English II	Railroad Engineering
English III	Shorthand I
English IV	Shorthand II
English, Business	Spanish
Foundations	Spelling
French I	Stereotomy
French II	Surveying, Plane
French III	Surveying, Railroad
French IV	Trigonometry
Geometry, Plane	Typewriting
Geometry, Solid	Thermodynamics
Geometry, Analytical	Topographical Drawing
Geometry, Descriptive	Theory of Structures
	Testing Materials
	Technical Electrical Measurements
	Valve Gears

COURSES IN THE EVENING SCHOOLS

Accounting Problems, Advanced	Firing
Agency	French I
Algebra I	French II
Algebra II	French III
Architectural Drawing I	French IV
Architectural Drawing II	Geometry, Plane
Architectural Drawing III	Geometry, Solid
Architectural Drawing IV	Geometry, Analytical
Arithmetic	Geometry, Descriptive
Arithmetic, Commercial	German I
Auditing, Advanced	German II
Auditing, Elements of	German III
Automobile, Operator's Road Course	German IV
Automobile, Operator's Lecture Course	Greek
Automobile, Operator's Laboratory	History, American
Automobile Garage Course	History, Ancient
Automobile Machine Shop Repair Course	Illustrating & Cartooning
Bankruptcy	Industrial Design
Bills & Notes	Italian
Bookkeeping, Elementary	Latin I
Bookkeeping, Advanced	Latin II
Business Organization & Administration	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Law, Special (in Law School)
Chemistry III	Lettering
Chemistry IV	Machine Drawing
Civil Service	Massachusetts Practice
Concrete I	Mathematics, Engineering
Concrete II	Mechanism
Constitutional Law	Partnership
Contracts	Penmanship
Corporations	Physical Geography
Cost Accounting, Elements of	Physics
Cost Accounting, Advanced	Physiology
Court Practice	Plan Reading & Estimating
Criminal Law	Pleading
Drawing, Freehand	Property I
Drawing, Mechanical	Property II
Economics, Applied	Property III
Economics, Principles of	Public Speaking
Elementary Science	Railroad Engineering
Electricity I	Sales
Electricity II	Shorthand I
Electricity III	Shorthand II
English I	Spanish
English II	Spelling
English III	Steam Engineering
English IV	Surveying, Plane
English, Business	Surveying, Railroad
Equity I	System Building, Advanced
Equity II	System Building, Elements of
Evidence	Torts
	Trigonometry
	Typewriting
	Window Dressing

Preparatory School Subjects scheduled both Winter and Summer Terms

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Association Institute

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

Organized on the University Plan

Day, Evening and Summer Schools from the 7th Grade Grammar up to and including work qualifying for a College Degree.

College Preparatory School

Day and Evening Sessions

A high-grade College Preparatory School consisting of a Grammar School (7th and 8th grades) and a High School fitting for the Colleges, Medical and Dental schools, Massachusetts Institute of Technology, Annapolis, West Point, Lowell School for Industrial Foremen, Law schools and the classified Civil Service.

School of Business

Day and Evening Sessions

Offers all of the courses of the regular Business School program, and additional cultural courses preparing for business and admission to our School of Commerce and Finance.

Co-operative Engineering School

Day Sessions

Four years' courses of college grade in Chemistry, Mechanical and Civil Engineering etc., in co-operation with business firms. Students earn while learning.

School of Commerce and Finance

Evening Sessions

Established 1907; incorporated 1911. Offers a two years' course in preparation for the Certified Public Accountants' examinations. Provides a three years' course in the science of Business administration. Grants degrees of Bachelor of Commercial Science and Master of Commercial Science.

Evening Law School

Evening Sessions Only

Established in 1898; incorporated in 1904. Provides a four years' course in preparation for the Bar and grants the Degree of Bachelor of Laws.

Polytechnic School

Day and Evening Sessions

A School of many departments, training students in Applied Science. Much of this work is of technical grade.

School of Electricity

Day and Evening Sessions

Offers one and three years' evening courses and a four years' day course in Applied Electricity and Engineering. Well equipped shops and laboratories.

Automobile School

Day and Evening Sessions

Deals with the construction, care, and operation of all types of gasoline vehicles; a large staff of teachers; ample equipment and garage. NEW BUILDING.

For further information concerning any of the above schools or departments, address the Educational Director,

FRANK PALMER SPEARE, 10 Ashburton Place, Boston, Mass.
after October 1, 1912, Huntington Avenue, Boston.



OUR NEW HOME

EVENING
PREPARATORY
and
BUSINESS
SCHOOLS
1912-13

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

Boston
Young Men's Christian Association
INSTITUTE



Evening Preparatory School
Evening Business School

1912-13

BOSTON, MASSACHUSETTS
Published by the Young Men's Christian Association
1912

Calendar

Summer Term 1912

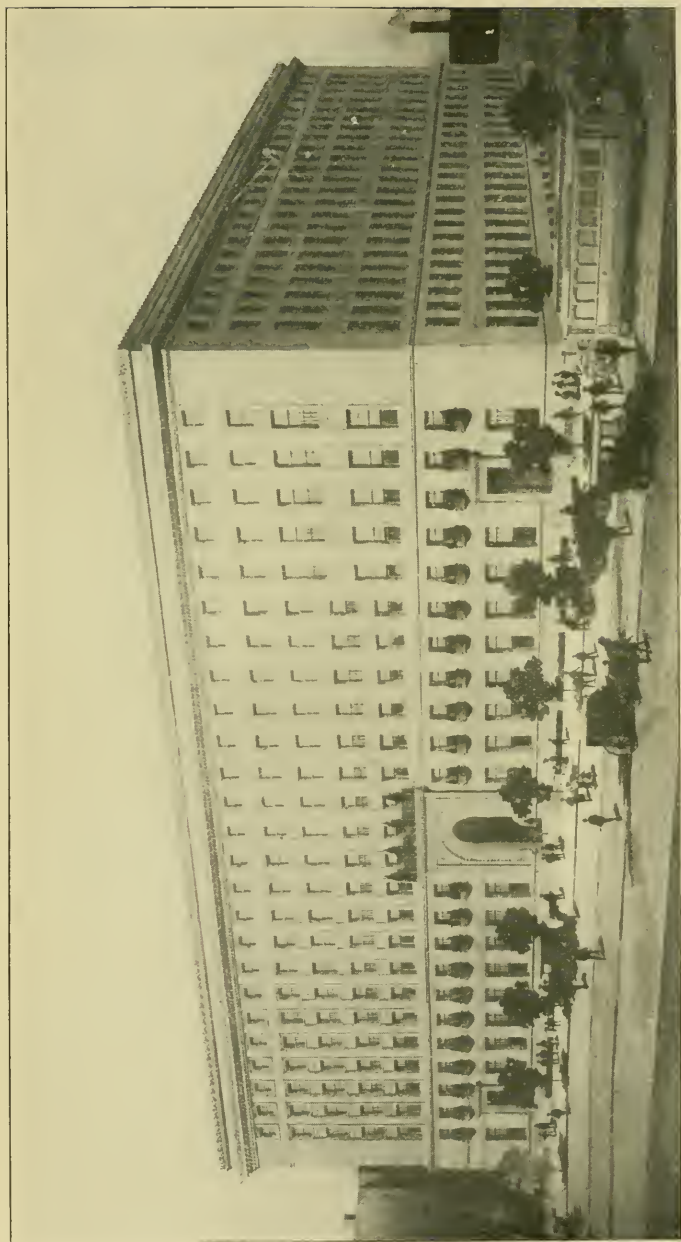
(Preparatory School Only)

- May 16, 17, 18. Registration
- May 20. Opening of Term
- May 30. Memorial Day, Holiday
- July 4. Independence Day, Holiday
- Sept. 2. Labor Day, Holiday
- Sept. 20. Close of term

Winter Term 1912-13

(Preparatory and Business Schools)

- Oct. 3, 4, 5. Registration
- Oct. 7. Opening of term
- Oct. 12. Columbus Day, Holiday
- Nov. 28. Thanksgiving Day, Holiday
- Dec. 25. Christmas Day, Holiday
- Feb. 22. Washington's Birthday, Holiday
- April 19. Patriots' Day, Holiday
- April 25. Close of Winter Term



OUR NEW HOME

The above cut represents the new Association Building now under process of construction on Huntington Ave. It will contain among other features, school accommodations of the very best, a fine gymnasium, bowling alleys, swimming pool, cafe, dormitories, shops and laboratories, camera club rooms, social and recreative rooms and auditorium.

The educational portion of the building will be ready for occupancy October 1, 1912

Officers of Administration



General Administrative Officers

ARTHUR S. JOHNSON, *President*

JACOB P. BATES, *Vice-President*

HAROLD PEABODY, *Recording Secretary*

FRANCIS B. SEARS, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*



Educational Committee

JOHN ROUSMANIERE, *Chairman*

WILLIAM E. MURDOCK

ALBERT H. CURTIS

MORGAN L. COOLEY

GEORGE P. HITCHCOCK



Educational Administrative Officers

FRANK P. SPEARE, *Educational Director*

GALEN D. LIGHT, *Asst. Educ. Director and Bursar*

H. W. GEROMANOS, *Supt. of Evening School System*

IRA A. FLINNER, *Supt. of Day School System*



Advisory Committee

PROF. PAUL H. HANUS, *Professor of Education, Harvard*

PROF. W. M. WARREN, *Dean, College Lib. Arts, B. U.*

Faculty



IRA A. FLINNER, A.B., PRINCIPAL,
(Harvard University)
Mathematics

CLARENCE E. EBERT,
(Yale University)
Mathematics

LUTHER F. ELLIOT, S.B.,
(Bridgewater Normal) (Harvard University)
Commercial Subjects

HAROLD S. GRAVES,
(Boston Normal Art)
Mechanical Drawing

WILLIAM A. LACKEY, A.B., LL.B.,
(Harvard University) (Boston University)
English and Arithmetic

JAMES METIVIER, A.B.,
(Harvard University)
French, German and Latin

ROLLA M. SHREVES, A.B.,
(Harvard University)
English and History

ELLWOOD B. SPEAR, A.B., PH.D.,
(Manitoba University) (Heidelberg University)
Chemistry

JAMES B. TAYLOR, A.B., A.M.,
(Harvard University)
English

JOHN INDLEKOFER
(Harvard University)
Mathematics

WALTER A. BALDWIN, A.B.,
(Ohio Wesleyan University) (Chicago University)
Physics and Chemistry

WALTER R. AMESBURY,
(Regular Instructor Bryant and Stratton)
Bookkeeping, Penmanship and Shorthand

FREDERICK C. HOSMER, A.B.,
(Boston University) (Harvard University)
Business English and Arithmetic

N. ELLIOT WILLIS,
(Bridgewater Normal)
Science

JAMES A. BELL, PH.B.,
(Grove City College)
Mathematics

Foreword

The Evening Preparatory School of the Boston Young Men's Christian Association has had a uniformly successful record in fitting men for the entrance examinations for Harvard, Yale, Brown, and Boston Universities, for Tufts, Dartmouth, Massachusetts Institute of Technology, and other colleges; also for the Young Men's Christian Association Law School, School of Commerce and Finance, and all branches of classified civil service.

The work of the school is adapted to the needs of the individual and appeals to men of intense purpose. Individual instruction and the greatest economy of time and energy consistent with thoroughness, are marked characteristics of the school. In this way the needs of all students are met in a most effective manner.

The Preparatory School offers nearly forty different courses, and from this number the student will have little difficulty in selecting those which will prepare him for the college or university he wishes to enter.

Any man of good moral character regardless of age, occupation or creed with adequate general education may be enrolled in the school.

A student may elect any subject, or combination of subjects, which best serves his particular needs. However, to prevent loss of time and expense to the student, he will not be allowed to elect courses which, on account of inadequate preliminary training and experience, he could not pursue with profit. The Principal should be consulted before registration.

Departments

ENGLISH

ENGLISH I. This course deals largely with applied English Grammar, with a special drill on all kinds of commercial papers; notes, checks, drafts, bills and receipts; telegrams and letters of introduction, recommendation and application.

ENGLISH II. English grammar continued with special emphasis on composition. Irving's Sketch Book, Scott's "Lady of the Lake," and works of like grade are read and studied.

ENGLISH III. Composition and Rhetoric and study of the history of American Literature. Required reading taken from the following: Goldsmith's "The Vicar of Wakefield," Shakespeare's plays, Bunyan's "Pilgrim's Progress," etc.

ENGLISH IV. Composition and Rhetoric and study of the history of English Literature. Milton, Macaulay and other models will be studied.

LATIN

LATIN I. Beginners' Latin lessons complete; easy Latin prose. The aims of this year's work are accurate knowledge of vocabulary, inflection and elementary syntax, and a careful foundation for the work in Caesar.

LATIN II. Caesar, Sallust and Latin Composition, and review of beginners' book. Prose composition and translation throughout the year, together with careful grammatical review strengthening and broadening the work of the first year.

LATIN III. Cicero, Virgil and Latin Composition. Due attention is given to Roman life and customs, and to the study of mythology in connection with the literatures of other languages.

SPANISH

The School of Commerce and Finance regularly schedules classes in Spanish which are open to preparatory School students.

FRENCH

FRENCH I. Chardenal's Complete French Course. Selected readings. Special emphasis placed on pronunciation and the acquiring of a vocabulary.

FRENCH II. Chardenal's Complete French Course, Special composition work and selected readings. Students who complete both French I and II are prepared to take college entrance examinations in Elementary French.

FRENCH III and IV. The nature of these courses will be determined by those electing them. They will ordinarily be given only when a sufficient number enroll.

GREEK AND ITALIAN

Classes will be organized in these languages if the number of applicants is large enough.

GERMAN

GERMAN I. German Grammar; Gueber, *Marchen und Erzählungen*. Special emphasis is placed on pronunciation and the acquiring of a vocabulary.

GERMAN II. Study of grammar continued and completed with special attention to syntax. Selected readings. Students who complete German I and II are prepared to take college examinations in Elementary German.

GERMAN III and IV. These courses will correspond to those of the same grade given in the best high schools. Classes will be organized only when a sufficient number enroll.

HISTORY

AMERICAN HISTORY. This course includes enough of English history to enable one to appreciate and understand American history. Special emphasis is placed on the study of some of the great problems of American history. After a study of the history of the nation; state, county, town, and city governments are considered.

ANCIENT HISTORY. This course deals with the history of the ancient world to 800 A.D. Special emphasis is placed on Greek and Roman life, literature, art and political, social and religious institutions.

MATHEMATICS

ARITHMETIC. A course in general arithmetic, covering much of the ground usually covered in grammar schools. Starting with fractions, the course includes the most essential subjects. A great deal of individual work is done.

ALGEBRA I. This course includes a study of the various subjects of Algebra through quadratic equations. Students who complete this course are prepared to take college entrance examinations in elementary algebra.

ALGEBRA II. A short review of the work of elementary algebra. Enough advanced work to enable students to pass the advanced college entrance requirements in Algebra.

GEOMETRY I. The five books of plane geometry. A large number of originals. Special attention given to those who expect to take entrance examinations.

GEOMETRY II. This course is intended primarily for those who are preparing for college. The remaining books of geometry are studied with special attention to the originals.

***TRIGONOMETRY.** This course is intended for those who wish to offer trigonometry for college entrance, or for engineering students. ■

SCIENCE

CHEMISTRY I. A course of lectures supplemented by classroom work and laboratory work, on the elementary principles of chemistry. Students who complete the work satisfactorily will have no trouble in passing entrance examinations given by the best colleges and scientific schools.

PHYSICS I. Recitation and laboratory work covering preparation for college. Constant drill in the solution of problems involving the elementary principles of physics.

PHYSICAL GEOGRAPHY. This course gives a large amount of practical information, bearing directly on the physical conditions that affect customs, occupations and food distribution.

PHYSIOLOGY AND HYGIENE. This course includes a study of the structure, the various systems, and organs of the body, and the observance of the laws of health.

*For outlines of courses in higher mathematics see Polytechnic School catalogue.

MECHANICAL DRAWING

A one-year course in Mechanical Drawing is offered in the Preparatory School to those who wish to present this subject for admission to college.

MECHANICAL DRAWING I. This course includes (a) use of drawing instruments, T square, triangles, etc. (b) Simple projections. (c) Nuts and screws. (d) Oblique projections. (e) Penetration of solids. (f) Simple gearing. (g) Isometric projections. (h) Lettering.

Other courses in drawing are outlined in the Polytechnic School Catalog.

General Information

TERMS

The year is divided into two terms of nearly equal length—the winter term, including the period from October to May; and the summer term, including the period from May to October. The summer term is several weeks shorter, but by scheduling the courses more evenings a week during the summer the same amount of work is covered.

The courses are so arranged that a year's work, as regularly counted by high schools, is completed in each of the terms. Students pursue ordinarily only three subjects each term and have no difficulty in covering a year's work in a term. One can, by such an arrangement of terms, complete a full four years' high school course in two calendar years.

The school sessions are held on five evenings a week, beginning with Monday evening and ending with Friday evening. The classes are scheduled from 6.30 to 9.30 each evening.

GRADES

The following system of grading is used:

A	90% to 100%	Very good
B	80% to 90%	Good
C	70% to 80%	Fair
D	60% to 70%	Poor
F	Below 60%	Failure

The passing mark is 60%.

At the close of each term examinations are given in the various subjects of study and the standing of each student who has completed the term's work is recorded in our record books. If a student pursues a course part of the term and then drops it no record of his class standing is kept at the office. Students are therefore warned to pursue courses in full and to take examinations; for later they may greatly need an official rating.

AFTERNOON COURSES

Realizing that a large number of men are so employed that they could spend several afternoons a week in study we have arranged to give such persons courses in the Preparatory School suited to their needs and at a time convenient to them.

Sessions

The sessions will be held on Tuesday and Thursday afternoons from 3.00 to 5.00.

Courses

The following courses will be scheduled: English I and II, Arithmetic, Algebra, History, Latin, French, Physiology and Hygiene, Physical Geography and other courses for which there is sufficient demand.

Tuition

The tuition rate for the afternoon courses is \$15.00 per course for a term of thirty weeks. Those who wish to take any of the above work for a shorter period will be obliged to pay fifty cents per hour.

BAR EXAMINATIONS

A large number of the students of the Preparatory School prepare for the Law School. We reprint below a copy of the recent ruling of the Board of Bar Examiners. These requirements are in force for all those who enter or have entered the Y. M. C. A. Law School subsequent to the year 1910 as first year students.

General Education

After February 1, 1914, an applicant must show by certificate or certificates that he,—

(a) Is a graduate of a college, or has passed the entrance examinations of a college, or of the College Entrance Examination Board, or examinations substantially equivalent thereto; or has complied with the entrance requirements of a college or

(b) Is a graduate of a day high school, or of a school of equal grade; or

(c) Has passed the examinations given for admission to

the state normal schools of Massachusetts in the following subjects:—

- 7 I. Language.—English, with its grammar and literature.
1 II. United States History.—The history and civil governments of Massachusetts and the United States, with related geography and so much of English history as is directly contributory to a knowledge of United States History.

- III. (a) Latin or V. Any two of the following:
(b) French (a) Physiology and Hy-
IV. (a) Algebra or (b) Medicine
(b) Plane Geometry (b) Physics
(c) Chemistry
(d) Botany
(e) Physical Geography

N. B. A certificate or certificates showing compliance with the foregoing requirements must be filed with the chairman of the board at least ten days before the examination which the applicant desires to take.

Certificates

The Preparatory School prepares students to pass the Normal School examinations in the subjects required by the Bar Examiners.

Students who wish to be certificated by the school for the Bar Examinations will be required to complete the following course of study:

Required Subjects	
English	4 units
Mathematics	2 units
Foreign Language	2 units
History	1 unit
Science.....	1 unit
<hr/>	
Total	10 units
Optional Subjects	
Mathematics	1 unit
Foreign Language	3 units
History	1 unit
Science.....	2 units
Economics	1 unit
Bookkeeping	1 unit
Stenography	1 unit
Mechanical Drawing	1 unit

Five units are to be selected from the optional subjects, making a total of fifteen units for graduation.

One may, if otherwise qualified, enter the Law School without having completed the full preparatory course. Any conditions must be made up during the summer term or during the regular year with the work of the Law School.

(See Law School catalogue).

TUTORING

Every year a large number of men come to us to be tutored. We are able to furnish tutors in any preparatory subject at \$1.00 an hour. The members of the regular faculty are usually available for such special work. We are able, however, owing to our proximity to higher institutions of learning, to furnish high-grade tutors, should members of our own force be unable to arrange suitable hours.

TUITION RATES

The rate of tuition for the Preparatory and the Business Schools is \$30.00 per term (See page 12) including membership. Students are permitted to take any combination of courses by paying the above rate, except that Chemistry and Physics shall not be included in the combination. When Chemistry is included the additional fee is \$10.00. When Physics is included the additional fee is \$5.00.

Students are also permitted to pay a fixed rate for each subject when it is found more convenient to do so. The following are the tuition rates per subject in addition to a \$2.00 membership in the Y. M. C. A.:

	Single Subject	Additional Subjects
Arithmetic (Not Commercial)	\$8.00	\$5.00
American History	8.00	5.00
English I	8.00	5.00
Penmanship	8.00	5.00
Typewriting	8.00	5.00
Chemistry	24.00	21.00
Physics	18.00	15.00
All other subjects regularly catalogued	13.00	10.00

Students who discontinue a course, but who have attended at least four or more recitations in the subject will be required to pay one-half a term's tuition.

No student is permitted to transfer from one course to another without consulting the Principal beforehand and receiving a transfer order, which must be presented at the main office for the proper ticket.

The fees for all courses are payable in advance.

SCHEDULE

	Winter	Summer
Algebra	Tues., Thurs.	Tues., Thurs.
Algebra	Tues., Thurs., or Wed., Fri.	8.30-9.30
Arithmetic	Tues., Thurs.	6.30-7.30
Chemistry I	Mon., Wed., Fri.	6.30-7.30
English I	Tues., Thurs.	7.30-8.30
English II	Tues., Thurs.	7.30-8.30
English III	Tues., Thurs.	6.30-7.30
English IV	Tues., Thurs.	7.30-8.30
French I	Tues., Thurs.	8.30-9.30
French II	Tues., Thurs.	8.30-9.30
*French III	Tues., Thurs.	8.30-9.30
Geometry, Plane	Wed., Fri.	7.30-8.30
*Geometry, Solid	Wed., Fri.	7.30-8.30
German I	Mon., Fri.	8.30-9.30
German II	Mon., Fri.	8.30-9.30
*Greek	To be announced	6.30-7.30
History (American)	Tues., Thurs.	7.00-8.00
History (Ancient)	Tues., Thurs.	8.30-9.30
*Italian	To be announced	7.30-8.30
Latin I	Tues., Thurs.	To be announced
Latin II	Mon., Fri.	Mon., Wed., Fri.
*Latin III	Mon., Fri.	Mon., Wed., Fri.
*Physical Geography	Tues., Thurs.	Tues., Thurs.
Physics	Tues., Thurs.	Tues., Thurs.
Physiology	Tues., Thurs.	Tues., Thurs., Fri.
Starred courses organized when called for by sufficient numbers.		8.30-9.30

HIGH SCHOOL PROGRAM

Winter				Summer	
	<i>Courses</i>	<i>Evenings</i>	<i>Time</i>	<i>Evenings</i>	<i>Time</i>
First Year	English I	Tues., Thurs.	8.00-8.45	Mon., Wed., Fri.	7.30-8.30
	Arithmetic	Tues., Thurs.	7.15-8.00	Mon., Wed., Fri.	6.30-7.30
	Am. Hist. and Civics	Tues., Thurs.	8.45-9.30	Tues., Thurs.	8.30-9.30
Second Year	English II	Tues., Thurs.	7.15-8.00	Tues., Thurs.	6.30-7.30
	Algebra	Tues., Thurs., or Wed., Fri.	8.00-8.45	Mon., Wed., Fri.	6.30-7.30
	Latin I or	Tues., Thurs.	8.00-8.45	Mon., Wed., Fri.	7.30-8.30
	French I	Tues., Thurs.	6.30-7.15	Mon., Wed., Fri.	8.30-9.30
	Physical Geography	Tues., Thurs.	6.30-7.15	Tues., Thurs.	8.30-9.30
Third Year	English III	Tues., Thurs.	8.45-9.30	Tues., Thurs.	7.30-8.30
	Geometry	Wed., Fri.	7.15-8.00	Mon., Wed., Fri.	7.30-9.30
	Latin II or	Mon., Fri.	8.00-8.45	Mon., Wed., Fri.	6.30-7.30
	French II	Tues., Thurs.	7.15-8.00	Tues., Thurs.	8.30-9.30
	Ancient History	Tues., Thurs.	8.00-8.45	Tues., Thurs.	7.30-8.30
Fourth Year	English IV	Tues., Thurs.	6.30-7.15	Tues., Thurs.	8.30-9.30
	Physiology	Tues., Thurs.	7.15-8.00	Tues., Thurs.	6.30-7.30
	French III or	Tues., Thurs.	8.45-9.30	Tues., Thurs.	7.30-8.30
	Latin III	Mon., Fri.	6.30-7.15	Tues., Thurs.	6.30-7.30
	Physics I	Tues., Thurs.	8.00-8.45	Tues., Thurs., Fri.	8.30-9.30
	Chemistry I	Mon., Wed., Fri.	7.15-8.00	Mon., Tues., Thurs., Fri.	7.30-8.30

Suggested program for those requiring a full high school course. Modifications adapted to each case will be made upon request.

ADDITIONAL INFORMATION

As an aid to worthy men who desire an education and are unable to pay in full even our slight charges, a limited number of scholarships has been provided, which will be judiciously distributed.

The tuition quoted is for the summer or the winter term unless otherwise specified.

Certificates are issued to students who complete certain prescribed courses.

Students who are obliged to be absent from any classes should notify the office in advance.

Examinations are held at the close of each term and the grades thus obtained are filed at the office.

Students may be admitted at any time if the Principal deems such admission advisable.

The office of the school is open every day from 9.00 A.M. to 10 P.M. during the entire year, for the purpose of giving information to those interested.

Pupils residing in suburban towns may, on nearly all railroads, travel to and from the school at greatly reduced rates. All inquiries regarding these rates should be made at the offices of the railroads.

The office has on hand textbooks used in the schools together with the necessary supplies.

Students are reminded of the advantages of the many other departments of the Young Men's Christian Association.

If the course or courses in which you are interested are not outlined in this catalogue, keep in mind that there are seven other catalogues issued. Write for those which interest you.

All tickets held by members of the Cambridge, Chelsea, Everett, Malden, Melrose, Newton, Quincy and Somerville Associations will be honored for social privileges in the Boston Association. Holders of such tickets are allowed credit of \$2.00 on either an educational or a gymnasium membership.

School of Business

VALUE OF A BUSINESS EDUCATION

The value of a knowledge of business and business methods, not only in mercantile pursuits, but in every calling and profession is generally recognized. It is business training which enables inexperienced men to act intelligently in daily transactions of life, to have a proper understanding of business affairs, and to climb the ladder of success rapidly. The Business School prepares its graduates for the duties of business life—for the work of the store, the office, and the counting room—as completely and in the same proportion as the law, medical, or technical schools prepare their students for the vocations which they intend to follow.

There is a great demand for well-trained business men—men, who are able on account of their skill and ability in business to take responsibility upon their shoulders. No man needs to work in a poorly paid position if he will make the most of his evenings. By spending two or three nights a week in our business school he can, in a short time, prepare himself for a better place.

COURSES OF STUDY

The following courses are offered: Bookkeeping Course, Shorthand Course, Employed Boys' Course and the General Commercial Course. A description of each of the courses follows:

BOOKKEEPING COURSE

This course is a complete presentation of the subject of bookkeeping, and includes also many other subjects of great practical value to the office worker.

The course is intended for those who desire to qualify as bookkeepers, accountants, cashiers, timekeepers, receiving clerks, bill clerks, cost clerks, stock clerks, traffic clerks, shipping

clerks or office managers. The usual time required for completion is thirty weeks.

The subjects considered are Bookkeeping, Penmanship, Commercial Arithmetic and Business English.

SHORTHAND COURSE

This course constitutes a thorough training in shorthand and typewriting, together with considerable instruction in plain business English and Arithmetic.

Those who complete this course will be prepared to hold a position as stenographer, correspondent or collection clerk in any office, and eventually leads to chief clerk, private secretary and department manager after some practical experience has been acquired. The average time to complete this course is thirty weeks.

EMPLOYED BOYS' COURSES

Two courses are offered to employed boys, one in *Bookkeeping* consisting of Bookkeeping, Correspondence, Penmanship, and Commercial Arithmetic; and the other in *Shorthand*, consisting of Shorthand, Typewriting and English.

The tuition rate for each course is \$4.00 upon entering, \$4.00 November 15 and \$4.00 January 15. This rate is in addition to membership in the Boys' Department—\$2.00 a year for boys, fifteen to nineteen years, \$1.00 a year for boys, twelve to fifteen years. No charge is made for the use of books.

GENERAL COMMERCIAL COURSE

This course is intended to give those who have not taken a high school course a good practical training, and also to serve as a preparatory course for those who intend later to enter the Y. M. C. A. School of Commerce and Finance.

The School of Commerce and Finance is of college grade and is chartered by the state to grant the Bachelor's and the Master's degree. A candidate for the Bachelor's degree must be a graduate of a high school or possess an academic education equivalent thereto.

Those who complete the following course will be admitted

to the School of Commerce and Finance as candidates for the degree.

Required Subjects

English	3 units (English I and II and Business English)
Mathematics	2 units (Commercial Arithmetic and Algebra)
Language	2 units (French or German or Latin or Spanish)
History	1 unit (Industrial)
Geography	1 unit (Commercial)
Bookkeeping	1 unit (Elementary)

Optional Subjects

Four units to be selected

Mathematics	1 unit
Foreign Language	2 units
History	1 unit
Science	2 units
Stenography	1 unit
Mechanical Drawing	1 unit

Fourteen units are required for graduation. A unit means a term's work.

OUTLINE OF SUBJECTS

BOOKKEEPING. A short intensive course in practical bookkeeping, covering the scope of the average high school and business college course. The elements of double entry bookkeeping are taught without the use of a textbook. At the proper time the text-book and bookkeeping blanks are introduced, affording the student the necessary practice in applying the principles of accounts to business transactions. Wholesale, retail and manufacturing bookkeeping are included in the practice work.

In the second half year many supplementary exercises will be introduced for the purposes of drill and practice in the more advanced bookkeeping principles.

Students completing this course satisfactorily may register for courses in the Department of Accountancy without further examination.

BUSINESS ENGLISH. A course training the student in the use of correct and forceful English. Special emphasis will be placed upon the practical details of construction, punctuation, choice of words, proofreading and upon the preparation of manuscripts for the printer. Students are required to write business letters, themes, reports, arguments and advertising literature of all kinds.

COMMERCIAL ARITHMETIC. A one-year course in practical business arithmetic. While it is the intention to teach

the principles involved in all arithmetical calculations, the greater part of the time will be devoted to systematic drills with special emphasis on accuracy and rapidity.

The hours have been so arranged that both bookkeeping and shorthand students may take advantage of a practical course of present-day commercial calculations.

PENMANSHIP. A one-year course in plain business writing. Students are required to devote one hour to practice in the class room, and will receive the individual criticism of the instructor in charge.

The student is required to preserve all home work in budget form and the passing of the mid-year and final examinations is dependent upon these budgets.

SHORTHAND. A one-year course in shorthand. Experience has proved that during a period of one year an average student, having a fair English training, may learn to write in shorthand, from dictation of ordinary business correspondence, at the rate of approximately one hundred words a minute, and transcribe the same on the typewriter, with a very low percentage of material shorthand errors.

During the first part of the course the principles will be thoroughly taught, after which will come drills and exercises in cumulative and special phrasing, and dictation from business letters, etc., at graded speeds. In the latter part of the course the student transcribes his notes on the typewriter, copies letters and does manifolding.

A speed sufficient for amanuensis work in a business office must be attained before the student is entitled to a certificate or to the services of the employment bureau.

The student desiring to use shorthand as a means of remunerative employment while preparing for some administrative position, will act wisely in selecting a standard system of shorthand. The system offered here is the Ben Pitman.

TYPEWRITING. It is only recently that the subject of typewriting has been given proper attention. The business man of today judges the ability of his stenographer not from his shorthand notes, but from his typewritten transcript and the time it takes to complete it.

This course is in charge of a specialist who gives his close attention to the work of the department. The "Touch" method

is taught, by which the student can acquire a greater speed than can be accomplished by the "Sight" method.

The student is first taught the mechanism of the machine, then the correct hand position and method of fingering. After these preliminaries, exercises on words, sentences and phrases are taken up in progressive order. In the advanced part of the course, instruction is given in letter-writing, addressing envelopes, manifolding, legal forms, card-indexing, tabulating, mimeographing, etc.

The student who finishes this course may feel assured that the training he has received will enable him to perform the work in a business office.

SCHEDULE

Monday	Business English	6.30-7.15
	Shorthand	7.15-9.15
	Typewriting	7.15-9.15
Tuesday	Commercial Arithmetic	6.30-7.15
	Penmanship	7.15-8.00
	Bookkeeping	8.00-9.30
Thursday	Commercial Arithmetic	6.30-7.15
	Penmanship	7.15-8.00
	Bookkeeping	8.00-9.30
Friday	Business English	6.30-7.15
	Shorthand	7.15-9.15
	Typewriting	7.15-9.15

The Business School is open during the winter term only.

For information not contained in this catalogue, call upon or address the Principal or Frank P. Speare, Educational Director, 10 Ashburton Place, Boston. Telephone, Haymarket 145.

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General Departments

DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B. P. E. Director

The Physical Department is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative, Hygienic, and Educational Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts. Basket ball, baseball and athletics.

DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced development and attain a spiritual foundation for successful life work the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups, and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter.)

DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following social features.

A Newly Equipped Game Room. The Popular Novel Club.
The Association Congress. The Land and Water Club.
Popular Social Evenings.

DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

The Employment Department, is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 percent discount from the legal rates and special effort is made to notify them when good positions are open.

BOYS' DEPARTMENT

DON S. GATES, A. B., City Secretary

The physical, social, employment, and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Membership dues for the boys range from one to six dollars according to the privileges desired. Boys' work is also organized in the North End, The South End and Roxbury.

Courses

COURSES IN THE DAY SCHOOLS

Alternating Current Machinery	German I
Advanced Structures	German II
Algebra I	German III
Algebra II	German IV
Arithmetic	Greek
Arithmetic, Commercial	History, American
Applied Mechanics	Hydraulic Engineering
Automobile Operator's Road Course	History, Ancient
Automobile Operator's Lecture Course	Heat, Engineering
Automobile Operator's Laboratory Course	Hydraulic Motors
Automobile Garage Course	Industrial Design
Automobile Machine Shop Course	Industrial Chemistry
Bookkeeping, Advanced	Latin I
Bookkeeping, Elementary	Latin II
Bridge Design	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Lettering
Drawing, Freehand	Machine Drawing
Drawing, Mechanical	Materials
Dynamics of Machines	Mathematics, Engineering
Elementary Science	Mechanism Design
Electricity I	Metallurgy of Iron
Electricity II	Penmanship
Electricity III	Physics
Electric Light and Transmission of Power.	Public Speaking
English I	Power Plant Design
English II	Railroad Engineering
English III	Shorthand I
English IV	Shorthand II
English, Business	Spanish
Foundations	Spelling
French I	Stereotomy
French II	Surveying, Plane
French III	Surveying, Railroad
French IV	Trigonometry
Geometry, Plane	Typewriting
Geometry, Solid	Thermodynamics
Geometry, Analytical	Topographical Drawing
Geometry, Descriptive	Theory of Structures
	Testing Materials
	Technical Electrical Measurements
	Valve Gears

COURSES IN THE EVENING SCHOOLS

Accounting Problems, Advanced	Firing
Agency	French I
Algebra I	French II
Algebra II	French III
Architectural Drawing I	French IV
Architectural Drawing II	Geometry, Plane
Architectural Drawing III	Geometry, Solid
Architectural Drawing IV	Geometry, Analytical
Arithmetic	Geometry, Descriptive
Arithmetic, Commercial	German I
Auditing, Advanced	German II
Auditing, Elements of	German III
Automobile, Operator's Road Course	German IV
Automobile, Operator's Lecture Course	Greek
Automobile, Operator's Laboratory	History, American
Automobile Garage Course	History, Ancient
Automobile Machine Shop Repair Course	Illustrating & Cartooning
Bankruptcy	Industrial Design
Bills & Notes	Italian
Bookkeeping, Elementary	Latin I
Bookkeeping, Advanced	Latin II
Business Organization & Administration	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Law, Special (in Law School)
Chemistry III	Lettering
Chemistry IV	Machine Drawing
Civil Service	Massachusetts Practice
Concrete I	Mathematics, Engineering
Concrete II	Mechanism
Constitutional Law	Partnership
Contracts	Penmanship
Corporations	Physical Geography
Cost Accounting, Elements of	Physics
Cost Accounting, Advanced	Physiology
Court Practice	Plan Reading & Estimating
Criminal Law	Pleading
Drawing, Freehand	Property I
Drawing, Mechanical	Property II
Economics, Applied	Property III
Economics, Principles of	Public Speaking
Elementary Science	Railroad Engineering
Electricity I	Sales
Electricity II	Shorthand I
Electricity III	Shorthand II
English I	Spanish
English II	Spelling
English III	Steam Engineering
English IV	Surveying, Plane
English, Business	Surveying, Railroad
Equity I	System Building, Advanced
Equity II	System Building, Elements of
Evidence	Torts
	Trigonometry
	Typewriting
	Window Dressing

Preparatory School Subjects scheduled both Winter and Summer Terms

CATALOG
OF THE
Co-Operative Engineering
SCHOOL

1912-1913



PUBLISHED BY THE
EDUCATIONAL DEPARTMENT
OF THE
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION
HUNTINGTON AVENUE, BOSTON, MASS.

(2, 8 and 10 Ashburton Place until October 1, 1912)

CATALOG
OF THE
Co - Operative Engineering
School



CATALOG
OF THE
INSTRUCTING STAFF
TOGETHER WITH
A Statement of the Requirements for Admission
AND
A Description of the Courses of Instruction
1912-1913



OUR NEW HOME

The above cut represents the new Association Building now under process of construction on Huntington Ave. It will contain among other features, school accommodations of the very best, a fine gymnasium, bowling alleys, swimming pool, cafe, dormitories, shops and laboratories, camera club rooms, social and recreative rooms and auditorium.

The educational portion of the building will be ready for occupancy October 1, 1912

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Officers of Administration

General Administrative Officers

ARTHUR S. JOHNSON, *President*

JACOB P. BATES, *Vice-President*

HAROLD PEABODY, *Recording Secretary*

FRANCIS B. SEARS, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*

Educational Committee

JOHN ROUSMANIERE, *Chairman*

WILLIAM E. MURDOCK

ALBERT H. CURTIS

MORGAN L. COOLEY

GEORGE P. HITCHCOCK

Educational Administrative Officers

FRANK P. SPEARE, *Educational Director*

GALEN D. LIGHT, *Asst. Educ. Director and Bursar*

H. W. GEROMANOS, *Supt. of Evening School System*

IRA A. FLINNER, *Supt. of Day School System*

CHARLES B. GRAY, *Secretary*

Advisers

The following gentlemen have agreed to act in an advisory capacity on the more important executive matters of the school where their service can be of the greatest value to us.

Dr. Richard Maclaurin, President of Massachusetts Institute of Technology

Charles A. Prosser, Secretary of National Commission on Industrial Education

James P. Munroe, Secretary of Massachusetts Institute of Technology Corporation

William McKay, General Manager, New England Gas & Coke Co.

Paul Winsor, Chief Engineer, Boston Elevated Railway Company

Officers of Instruction



- H. W. GEROMANOS, S.B., Mass. Inst. Tech., Dean
Royal D. Bradbury, S.B., Concrete Construction
James Brough, Industrial Design and Lettering
A. L. Chesley, Chemistry
J. A. Coolidge, S.B., Mathematics and Physics
Carl S. Ell, S.B., M.S., Surveying and Applied Mechanics
A. L. Gardiner, S.B., Valve Gears
H. W. Geromanos, S.B., Descriptive Geometry and Chemistry
Harold Graves, Mechanical Drawing and Lettering
Frederick C. Hosmer, A.B., English
John W. Howard, S.B., Surveying
John Indlekoffer, Mathematics
Ervin Kenison, S.B., Descriptive Geometry
J. F. Norton, S.B., Ph.D., Chemistry
Thomas E. Penard, S.B., Mathematics
Charles H. Restall, S.B., Railroad Engineering
W. Lincoln Smith, S.B., Electrical Engineering
Ellwood B. Spear, A.B., Ph.D., Chemistry
R. F. Symonds, S.B., Mechanism and Mechanical Engineering
Drawing



At the time of going to press, our annual election of instructors for the year has not been held, and so it is impossible to publish a complete list of the faculty for 1912-1913.



TAKING LEVELS FOR A CROSS SECTION
Weymouth Landing
Aspinwall and Lincoln, Civil Engineers



TAPING A FIELD COIL
Armature Shop
Boston Elevated Railway Company

Calendar

1912

- February 22, Thursday
Washington's Birthday (School exercises omitted)
- April 19, Friday
Patriots' Day (School exercises omitted)
- May 20—June 1
Final Examinations
- June 1
Close of School year
- June 2 to September 29, inclusive
Summer vacation
- June 13 and 14, Thursday and Friday
Entrance examinations of Co-Operative Engineering School
- July 8—12
Practical work commences for First Division
- September 12 and 13, Thursday and Friday
Second Entrance examinations
- September 23—30
Practical work commences for Second Division
- September 30, Monday
School work of year 1912-1913 begins
- October 12, Saturday
Columbus Day (School exercises omitted)
- November 28, Thursday
Thanksgiving Day (School exercises omitted)
- December 23 to December 27, inclusive
Christmas Recess

1913

- February 22, Saturday
Washington's Birthday (School exercises omitted)
- April 19, Saturday
Patriots' Day (School exercises omitted)
- June 2—14
Final Examinations
- June 14
Close of School year
- June 15 to September 14, inclusive
Summer vacation
- June 19—21, Thursday to Saturday
Entrance Examinations of Co-Operative Engineering School
- July 7—12
Practical work commences for First Division
- September 11—13, Thursday to Saturday, inclusive
Second entrance examinations
- September 15
School work of year 1913-1914 begins
- September 15—20
Practical work commences for Second Division

General Information

It has generally been conceded that where the practical and the theoretical elements of education can be taught simultaneously, the greatest good is derived by the student, and efforts are being made in all departments of education to accomplish this greatly desired end.

Technical school instruction, depending on class room work and laboratories, must always lack some of the vital characteristics of an actual manufacturing plant, owing to the fact that one is for educational purposes, while the other is operated for dividends. It is this latter fact that gives the Co-Operative School idea one great advantage over our usual educational plan. Instead of protecting the student, and training him for several years for a line of work to which he may later find himself to be entirely unfitted, the boy in the Co-Operative School is at once put to work in a commercial plant, and there learns life in its vital issues, as well as the problem of getting along with men; thus early finding out whether he has made a wise, or unwise, choice of his life work. This training, too, shows him the use and value of his school work, and finally gives him an unusual opportunity to acquire from actual experience that rare thing, *executive ability*, without which his life probably will always be spent on the lower levels of industry.

That the young men of New England might have an opportunity to attend such a technical school, where both practice and theory are correlated, and at the same time be enabled to defray a large part of the expense of their education by the returns from their practical work, the Co-Operative Engineering School of the Boston Young Men's Christian Association was started in 1909.

This school has now been in operation for three years, and the continually increasing interest in it, as well as its rapid and steady growth, show that it was much needed to fill a place that is filled by no other school in this vicinity.

OBJECT OF THE SCHOOL

The fundamental aim of this school is to fit young men for positions along Engineering lines, higher than they could reasonably expect to attain without further education than that of a high school course, but who are not able to attend the highest grade technical schools, or colleges. The training is not in any sense that of a trade school, nor is it exactly that of our best scientific schools, but it stands between the two. The work done is that of a regular technical school, of high standards, but only the essential subjects are taken, and they, only so far as they will have a direct bearing on the life work of the student. In other words, it is a limited technical training of high grade. The fact that most of our instructors are graduates of, or instructors in, the Massachusetts Institute of Technology, will show the character of work being done.

At present there are four lines of Engineering work being given, and the end sought is to give to students who have already had a high school preparation, or its equivalent, a good training in the fundamental sciences of Mathematics, Chemistry, and Physics, and in the important applications of the principles of these sciences to the several branches of engineering. Much more stress is laid on the development of the ability to apply effectively the knowledge acquired to new engineering problems, than to the memorizing of a multitude of details and to very abstract theory, which, while valuable, cannot be gone into too deeply in a course of this type.

The class room instruction is given to small sections, and in the drawing rooms and laboratories, the students receive a great deal of personal attention. The independent solution of assigned problems forms a large part of nearly all courses.

The Courses differ from those of many schools, in that a student is not permitted a wide range of subjects from which to choose, in the belief that better results are obtained by prescribing, after the student has selected the line of work for which he desires to prepare himself, the principal studies which he is to pursue.

PLAN OF OPERATION OF THE SCHOOL

To illustrate the idea of the curriculum at the school, take for instance, the case of a young man "A" who desires to take our Mechanical Engineering course.

"A" is assigned to one of the plants of a firm that is co-operating with us. Here he is put to work and spends that week working in the shop. The next week, "B" his mate, who has spent the first week in the school, takes "A's" place in the shop, and "A" puts in the week at school. Thus the work goes on, the two men exchanging places at the beginning of each week. The studies pursued in the course have a direct practical bearing on the outside work, with the exception of a few courses added, because of the aim which we have, to produce a better citizen, as well as a better employee. The courses given have been decided upon after conference between the co-operating employers and the school authorities, and are the result of the best ideas of both. The subjects are taught in a practical, not in an abstract, or a theoretical way. Thus, in mathematics, instead of teaching algebra, analytic geometry and calculus as so many separate subjects, they are correlated and taught as instruments for the solution of practical problems arising in engineering work. The aim throughout the course is to give it practical bearing and yet have it complete and thorough in all the needed essentials.

Correlation of Practical and Theoretical Work

The outside work of the student is as carefully planned as that at the school, and it is progressive. The manufacturers who co-operate with us generally agree, where practicable, to employ the boys in all the different departments of their establishments during their periods of practical duties; this training is just as complete as the school work, and is just as thorough. Where possible, the course of the learner is from the handling of the raw material to the shipment of the finished product. This practical training includes the use of the machines, as well as the executive duties of the plant, so that at the end of his course the graduate may not only know how to do things, but also why they are done in certain ways, and he may, we hope, be of value in improving methods of work. The following

firms are co-operating with us at the present time and giving employment to our students:—

Boston Elevated Railway Co.
Boston & Albany Railroad Co.
 Mechanical Engineering Department
 Civil Engineering Department
Boston & Maine Railroad Co.
 Mechanical Engineering Department
 Civil Engineering Department
Boston Consolidated Gas Co.
Aspinwall and Lincoln. Civil Engineers
New York, New Haven & Hartford Railroad Co.
Bay State Street Railway Co.
 Civil Engineering Department
 Mechanical Engineering Department
Edison Electric Illuminating Co.
New England Gas and Coke Co.
Simplex Electrical Company

A number of other firms have already agreed to co-operate with us, while several more have our plan under consideration and we have every reason to believe most of them will co-operate with us in the near future.

Below are typical schedules of practical work that have been prepared for our students by some of the companies which are giving our boys employment:—

BOSTON ELEVATED RAILWAY CO.

First Year

Six months, pit work in carhouse.
Six months, armature room.

Second Year

Twelve months, machine shop work.

Third Year

Six months, mechanical drafting room.
Six months, power station work.

Fourth Year

Six months, line department.
Six months, electrical engineer's department.

BOSTON & MAINE RAILROAD COMPANY

Six months, air brake shops.
One year, erecting work.
One year, machine shop.
One year, engine house repairs.
Six months, drafting room and testing work.

BOSTON CONSOLIDATED GAS CO.

Nine months, data takers.
Three months, office.
Three months, pipe fitter's helpers.
Three months, pump man's helpers.
Three months, blowers and exhausters.
Three months, laboratory.
Three months, valve room.
Three months, generator house.
Three months, steam fitters.
Three months, machine shop.
Three months, assistant engineers.
Three months, engineers.
Six months, laboratory.

NEW ENGLAND GAS & COKE COMPANY

Four months, bag wagons.
Four months, boilers and engine room.
Four months, machine shops.
Two months, pipe fitters,
Two months, carpenters.
Two months, laboratory.
Six months, batteries.
Two months, condenser house.
Two months, coke crusher.
Four months, cable roads.
Four months, towers.
Three months, ammonia house.
Three months, shipper's office.
Two months, time office.
Two months, laboratory.
Two months, general office.

SIMPLEX ELECTRICAL COMPANY

Six months, Insulating Department.
Six months, Braiding Department.
Six months, Cable Shop.
Six months, Twisting Department.
Six months, Machine Shop Construction Gang.
Six months, Electrical Construction Gang.
One year, Testing Room.

The above programmes show what the boys do in their practical work, and the courses of study pursued at the school show what they do along academic lines. It will be seen that

there is a considerable degree of correlation between theory and practice in the work they take up. The men under whose supervision the boys have been in their outside work, are practically unanimous in approval of our plan, and speak highly of the enthusiasm, earnestness and intelligence the students have shown in the performance of their duties.

Attitude of Co-operating Firms

Almost all the concerns which co-operated with us the last year, took one, or more, additional pairs of our students this year, which in itself is significant of their attitude toward our plan.

Earnings

For the practical work the student does, he is paid a certain amount per hour at the start, and a definite increase per hour after completing fixed periods of service. The sum earned is more than enough to pay the tuition and the necessary expenses of schooling, but will not cover the cost of living.

In some cases the boys are paid at a higher rate than is called for by their schedule of pay, but that is a courtesy of the company that gives them employment and is not in any way to be expected as a regular thing. The co-operating firms may make any salary schedule they desire, so long as it does not fall below that originally agreed upon.

The companies which co-operate with us, agree to pay our students ten (10) cents per hour during their first year of service; twelve (12) cents per hour during the second year; fourteen (14) cents per hour during the third year, and sixteen (16) cents per hour during the fourth year.

Basing the earnings on this scale, the student will earn from five (5) to six (6) dollars per working week during the first year, and an increase of approximately one (1) dollar per working week, for each succeeding year of the four. As there are about thirty weeks of work per year, the earnings will be from one hundred and fifty dollars, upwards.

Expenses

As the earnings of the students average from \$150 to \$200 a year, while their entire expense for school and membership in

the Y. M. C. A. is \$100, there is a considerable balance for incidentals.

Relation of the Co-Operative School to High Schools

This school is peculiarly adapted to the high school graduate who, although financially unable to continue his studies further, still has the ambition and ability to get ahead if given the opportunity. Thus boys, being graduated from high school, can still live at home but spend their time in fitting themselves for something better in the future.

Number of Students

The number of positions at our disposal is necessarily limited and so the number of students who can work part-time is also limited. In consequence of this, those students who apply first, will get first consideration in the matter of positions, and those who wish to enter should get in their applications as soon as possible.

Already a large number have applied for entrance in 1912 and most of the places we have, will be filled by these men, provided they are accepted by the co-operating firms and succeed in passing the entrance examinations.

Those applicants who apply for admission to the School too late to be assigned to practical work, may attend the School every week, or every alternate week, as they may wish, and will be assigned to practical work as soon as an opening occurs.

Outside Interests

A moderate participation in social and athletic activities is encouraged by the Faculty, although a standard of scholarship is required of the students which is incompatible with excessive devotion to such pursuits.

Four-year Courses

Regular four-year courses leading to a diploma, are offered in the following branches of engineering:—

Civil Engineering.

Mechanical Engineering.

Chemical Engineering.

Electrical Engineering.

Descriptions of these courses and schedules showing the subjects of instruction included will be found on succeeding pages.

Summer Schools

There is an evening summer preparatory school conducted by the Educational Department of the Association, and students having entrance conditions, or requiring further preparation for the entrance examinations, may avail themselves of this opportunity to cover the desired work.

Those of our students who fail to pass in any of their school work may be permitted to take up the study in the Summer School conducted by the Institute of Technology, provided of course, that Institution is offering such a course. Those students desiring this privilege should consult the Dean as special permission must be obtained to attend many of the courses.

Physical Training

Provision is made for giving gymnasium instruction to all students who desire it. The classes meet twice a week during the school year, but students who desire more exercise are permitted the use of the gymnasium at other times and are also allowed to go in with other classes.

Requirements for Admission

Detailed information in regard to the requirements for admission to the courses of instruction in the School will be found on succeeding pages. In general, the preparation necessary to enable an applicant to pursue one of the Courses corresponds with that given by good high schools in their four years' course.

School Year

The term begins September 30th, 1912, but on succeeding years the school year will commence on the third Monday in September. The date of opening has been placed late for the Fall of 1912, owing to the necessity of awaiting the completion of our new building. The school exercises are suspended on legal holidays and for one week at Christmas.

Registration

Each applicant for admission to the School is required to fill out a blank whereon he states his places of previous education as well as the names of persons to whom reference may be made in regard to his character and training. A deposit of (1) dollar is required when this application blank is filed. Should the applicant be rejected, one-half of this fee, or fifty cents, will be returned to him: should the application be approved, the fee will be applied toward his tuition.

When the application has been approved, the student is required to fill out an attendance card, blank forms of which will be supplied. A ten-dollar registration fee, which is non-returnable, is to be paid at the same time. This fee is also credited to the student as part payment toward his tuition.

Before a student will be put to work, or allowed to attend classes, this initial fee of ten (10) dollars must be paid.

An additional ten (10) dollars is required to be paid before any books, or supplies, are issued to him.

Attendance

Students are expected to attend all exercises in the subjects they are studying, unless excused by the Dean. With the exception of one hour in the middle of the day, exercises are held, and students are, in general, expected to devote themselves to the work of the school between 9 A.M. and 5 P.M. There are no exercises on Saturday after 12 N.

Status of Students

The ability of students to continue their courses is determined in part by means of examinations; but regularity of attendance and faithfulness to daily duties are considered equally essential.

Any student failing to make a satisfactory record in either school, or practical work, may be removed from his position in practical work.

Examinations

Examinations in all subjects are held at the close of each school year, in May and June, and cover the work done during

the year. All students who maintain a year's average of 80% or over, in their daily work and informal examinations, in any subject, may be excused from the final examination in that subject, at the discretion of the instructor in charge and with the approval of the Dean. When a final examination is taken, the year's rating in the subject is based half on the examination and half on the record of the year's work.

Students will not be admitted to professional work in the several courses without satisfactory records in those previous subjects on which the former especially depend. That is, for illustration, a student cannot take Advanced Surveying until he has completed Elementary Surveying.

Exceptions to this rule may be made in individual cases after special consideration by the instructor in charge and the Dean.

Reports

Informal reports in all subjects are sent every two months, and formal reports covering the year's work are sent at the close of each year. These reports are sent to students, and to the parents, or guardians, of the students. Notification will be made to parents, or guardians, in all cases of students advised, or required, to withdraw, or placed on probation.

Special Students

It is possible for students to enter the School and spend either every week at school, or else every other week at school, without being placed in practical employment. There is no extra charge under these conditions.

Socials

In order to provide for the social intercourse of the students, as well as to enable the men in the different divisions to meet one another, socials and entertainments are held monthly for their exclusive enjoyment. An out door field meet is also held yearly, in May, at which time various inter-class competitive games are held.

Vacations

The employers allow our students one week vacation at Christmas, and two weeks vacation during the summer. They are not paid for this time.

Summer Employment

When a student, for good reason, is unable to continue his practical work during the summer, when the school is not in session, it is frequently possible to get him leave of absence for the summer so that he can return to his employer in the fall. All special arrangements for the summer work must be referred to the Dean.

Conduct

It is assumed that students come to the School for a serious purpose, and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building, or to any of the furniture, apparatus, or other property of the school, the damage will be charged to the student, or students, known to be immediately concerned; but, if the persons who caused the damage are unknown, the cost of repairing the same may be assessed equally upon all the students of the School.

Students are expected to behave with decorum, to obey the regulations of the School, and to pay due respect to its officers. Conduct inconsistent with the general good order of the School, or persistent neglect of work, if repeated after admonition, may be followed by dismissal, or, in case the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is the aim so to administer the discipline of the School as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present, as his own, any work which he has not performed, or to pass any examination by improper means, is regarded as a most serious offense, and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

REQUIREMENTS FOR GRADUATION

To be graduated by the School, the student must have satisfactorily completed all subjects of his chosen course and in addition to this, he must have completed his period of practical work to the satisfaction of his employer.

No student will be graduated until all dues to the school

are discharged. The diplomas awarded graduates will be signed by both the school authorities and the employers.

Fees

• The tuition fee is \$100 per year and must be paid as follows:

Ten dollars at the time of registration.

Ten dollars additional, before receiving any supplies.

Thirty dollars December 1.

Thirty dollars February 1.

Twenty dollars April 1.

This fee includes full membership in the Association with gymnasium privileges, as well as the use of all books, drawing supplies, etc., etc., which are required in the school work. Such supplies as are required by the student for his school work are loaned to him by the School and must be returned on demand, in good condition, or else paid for.

Deposits

All deposits made when filing application cards, or before examinations, will be credited as part of this \$100.

Increase of Tuition

The tuition of all students entering the school, on, and after, September first, 1913, will be \$110 per year. Those students who are already members of the school at that time will be allowed to complete their course at the same rate of tuition that existed at the time of their entrance.

Payments

All payments should be made to Galen D. Light, Bursar.

Residence

For those students who will not be living at home, there will be excellent accommodations at very moderate rates in the dormitories that are being constructed in our new building. These rooms may be had separately, or in groups with a common reception room, and the price will vary from \$1.50, or \$2.00 upwards. As board costs from \$3.50 to \$5.00 a week, a student

could get room and board for from \$5.00 a week to \$6.00 per week.

Location

The buildings are located on Huntington Avenue, just beyond Massachusetts Avenue, and are within easy access to the various railroad stations, and the business and residential sections by electric cars.

REQUIREMENTS FOR ADMISSION

In general, the preparation necessary to enable an applicant to pursue successfully one of the regular courses, corresponds with that afforded by high schools of the better grade, offering a four year course of study.

Every applicant must furnish references as to his character and ability, and must show cause why he may reasonably be expected to make a success of his course, both in the practical work and at the School. He must be willing and able to work hard, both mentally and physically.

For those unable to carry on the Engineering Work owing to inadequate preliminary training, it has been found possible to plan special courses, of one, or two years' duration in the Preparatory School to fit for the Engineering Courses.

All applicants planning to take the examinations shall notify the Dean not less than ten days previous to the date of the examinations. For those students who may not be prepared to take the examinations in June, but who desire to work during the summer and then take the examinations in the Fall, arrangements may be made by consultation with the Dean.

Any subjects not passed in the June examinations may be passed at the September examinations.

Applicants for admission to the Co-Operative Engineering School are, in general, required to pass the entrance examinations of the School. Certificates of entrance examinations passed for admission to another similar school of the same, or higher grade, may be accepted in lieu of examinations.

ADMISSION TO THE FIRST YEAR

The student intending to enter the School should bear in mind that the broader his intellectual training in any direction, and the more extensive his general acquirements, the greater will be the advantages he may expect to gain. The importance of thorough preparation in the subjects set for examination also is great; for the character and the amount of instruction given in the School from the outset, leave little opportunity for one imperfectly fitted to make up deficiencies, and render it impossible for him to derive the full benefit from his course, or perhaps even to maintain his standing. The training given in the best high schools and manual training high schools, will, in general, afford suitable preparation.

The requirements of age and scholarship specified are regarded as a minimum in all ordinary cases, and only exceptional circumstances will justify any relaxation. Parents and guardians are advised that it is generally for the ultimate advantage of the student not to enter under the age of eighteen years.

ENTRANCE EXAMINATIONS IN BOSTON

Examinations for admission to the first year class will be held at 10 Ashburton Place on June 13th and 14th and on September 12th and 13th, 1912.

Students are advised to attend the June Examinations if possible, in order that any deficiencies then existing may be made up in September before entrance.

Fees

Before taking the examination the applicant must deposit the sum of five (5) dollars with the Bursar. If he passes the examination the fee will be credited toward his tuition, if he fails to pass, one-half the fee will be returned, the balance being retained to defray the expenses of making out the examination and correcting the papers.

Order of Examinations

Friday, June 14, 1912

8.45 A.M. to 9.00 A.M. Registration of Applicants

9.00 A.M. to 10.30 A.M.	Physics
10.30 A.M. to 12.00 N.	English
2.00 P.M. to 4.00 P.M.	Algebra

Saturday, June 15, 1912

9.00 A.M. to 10.30 A.M.	Plane Geometry
10.30 A.M. to 12.30 P.M.	Mechanical Drawing

Plane Geometry

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

Algebra

The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions; ratio and proportion; linear equations, both numerical and literal, containing one, or more, unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and numbers; exponents, including the fractional and negative.

English

The examination in English will be as far as possible a test of the candidate's ability to express himself in writing in a manner at once clear and accurate.

The candidate will be required to write upon subjects familiar to him. His composition should be correct in spelling, punctuation, grammar, idiom and formation of paragraphs, and should be plain and natural in style. He will be judged by how well, rather than by how much, he writes.

Physics

The candidate will be expected to be familiar with the fundamental principles of Physics. It is especially desirable that he should have a good knowledge of general mechanics and of the mechanics of solids, liquids and gases. A knowledge

of physical hypotheses is comparatively unimportant. Text-book instruction should be supplemented by lecture-room experiments. A sufficiently extended treatment of the subject will be found in any of the principal textbooks now in use in secondary schools. Ability to solve simple problems will be expected.

Mechanical Drawing

The applicant must be familiar with the projections of points, lines, planes and simple solids. Special attention is called to the importance of neatness and accuracy, and to facility in lettering and dimensioning drawings. Plates should be presented, showing the ground covered by the applicant.



MACHINE WORK
Air Brake Shop
Boston and Maine Railroad



DETERMINING THE CANDLE POWER OF GAS
Everett Works
Boston Consolidated Gas Co.

CO-OPERATIVE STUDENTS AT WORK



FIELD PRACTICE IN LEVELLING
Surveying Class

COURSES OF STUDY

Mechanical Engineering

First Year

	Hours of Exercise*
Mathematics I	90
Descriptive Geometry I	90
Chemistry I, Lectures, Laboratory and Recitations	144
Lettering	36
English I	54
Physics I, Lectures, Laboratory and Recitations	108
Applied Mechanics I	36
Mechanical Drawing	72

Second Year

	Hours of Exercise
✓ Physics II, Lectures, Laboratory and Recitations	108
✓ Carpentry and Wood-working	54
✓ Descriptive Geometry II	36
✓ Mathematics II	36
✓ English II	54
✓ Mechanical Engineering Drawing	144
✓ Mechanism	54
✓ Valve Gears	12
✓ Pattern Work	20
✓ Applied Mechanics II	36
✓ Practical Electricity	72

Third Year

	Hours of Exercise
Applied Mechanics III	90
Machine Drawing	144
Metallurgy of Iron	18
Thermodynamics	36
✓ Mechanical Engineering Drawing and Boiler Drawing	72
✓ Practical Electricity	72
✓ Heating and Ventilating	18
✓ Metal Working	48
✓ Forging, Chipping and Filing	36
✓ Heat Engineering	54

Fourth Year

	Hours of Exercise
Applied Mechanics IV	36
Dynamics of Machines	18
Practical Electricity	72
Engineering Laboratory	72
Machine Design	144
✓ Locomotive Engineering	72
Foundations	18
Hydraulic Motors	36
Power Plant Design	54

Note—The courses in wood and metal working are not required of students whose practical work includes those subjects.

*Hours of exercise refers to the number of hours devoted to the subject, in the class room, during the year.

COURSES OF STUDY

Electrical Engineering

First Year

	Hours of Exercise*
Mathematics I	90
Descriptive Geometry I	90
Chemistry I, Lectures, Laboratory and Recitations	144
Lettering	36
English I	54
Physics I, Lectures, Laboratory and Recitations	108
Applied Mechanics I	36
Mechanical Drawing	72

Second Year

	Hours of Exercise
✓ Physics II, Lectures, Laboratory and Recitations	108
✓ Mechanism	54
✓ Carpentry and Wood Working	54
✓ Mechanical Engineering Drawing	72
✓ Mathematics II	36
✓ Descriptive Geometry II	36
✓ English II	54
✓ Valve Gears	12
✓ Applied Mechanics II	36
Elementary Electricity, including Power and Its Transformations	16
Elements of Electrical Engineering	40
Methods of Wiring and National Electrical Code	16

Third Year

	Hours of Exercise
Applied Mechanics III	90
Thermodynamics	36
Machine Drawing	144
Alternating Currents	32
Alternating Current Machinery	8
Electrical Engineering Laboratory	32
Elementary Technical Electrical Measurements	13
⇒ Construction, Operation and Maintenance of Local Intercommunicating Telephones	5
Forging, Chipping and Filing	36
Heat Engineering	54

Fourth Year

	Hours of Exercise
Illumination and Photometry	6
Central Stations	15
— Electric Railways	15
Electrical Engineering Laboratory	36
Principles of Dynamo Design	12
Electric Light and Transmission of Power	6
Metallurgy of Iron	18
Hydraulic Engineering	36
Machine Tool Work	72
Stationary Structures	54
Surveying	36
Applied Mechanics IV	36
Pattern Making	20
Heat Engineering	54

*Hours of exercise refers to the number of hours devoted to the subject, in the class room, during the year.

COURSES OF STUDY

Civil Engineering

First Year

	Hours of Exercise*
Mathematics I	90
Descriptive Geometry I	90
Chemistry I, Lectures, Laboratory and Recitations	72
Lettering	36
English I	54
Physics I, Lectures, Laboratory and Recitations	108
Applied Mechanics I	36
Mechanical Drawing	72
Surveying I	144

Second Year

	Hours of Exercise
Surveying and Plotting	144
✓ Mathematics II	36
✓ Physics II, Lectures, Laboratory and Recitations	108
✓ Mechanism	54
✓ Descriptive Geometry II	36
✓ English II	54
Topographical Drawing	36
✓ Applied Mechanics II	36
Stereotomy	36

Third Year

	Hours of Exercise
Railroad Engineering, Fieldwork and Drawing	180
Highway Engineering	18
Dynamical Geology	54
Practical Electricity	72
Applied Mechanics III	90
Theory of Structures	36
Materials	36
Structural Geology	36
Metallurgy of Iron	18

Fourth Year

	Hours of Exercise
Theory of Structures; Bridges and similar structures	90
Bridge Design	180
Foundations	18
Heat Engineering	72
Advanced Structures	36
Railroad Design	72
Practical Electricity	72
Reinforced Concrete	120
Applied Mechanics IV	36

*Hours of exercise refers to the number of hours devoted to the subject, in the class room, during the year.

COURSES OF STUDY

Chemical Engineering

First Year

	Hours of Exercise *
Mathematics I	90
Descriptive Geometry I	90
Chemistry I, Lectures, Laboratory and Recitations	144
Lettering	36
English I	54
Physics I, Lectures, Laboratory and Recitations	108
Applied Mechanics I	36
Mechanical Drawing	72

Second Year

	Hours of Exercise
Qualitative and Quantitative Analysis	216
✓ Mechanism	54
✓ Mathematics II	36
✓ Physics II, Recitations, Lecture and Laboratory	108
✓ Descriptive Geometry II	36
✓ Practical Electricity	72
✓ English II	54
✓ Valve Gears	12
✓ Mechanical Engineering Drawing	72
✓ Applied Mechanics II	36

Third Year

	Hours of Exercise
Quantitative Analysis	126
Thermodynamics	36
Machine Drawing and Boiler Drawing	72
Applied Mechanics III	90
Heat Engineering	54
Organic Chemistry	72
Organic Chemical Laboratory	90
Technical Analysis	108
Metallurgy of Iron	18

Fourth Year

	Hours of Exercise
Organic Chemistry	36
Organic Chemical Laboratory	72
Applied Mechanics IV	36
Chemical Engineering	36
Practical Electricity	72
Industrial Chemistry	54
Industrial Chemical Laboratory	90
Elements of Electrical Engineering	40
Shop Work	72

*Hours of exercise refers to the number of hours devoted to the subject, in the class room, during the year.

SYNOPSIS OF COURSES

Mathematics I

Variation, logarithms, slide rule, exponential equations, the uses of formulas in Physics and Engineering.

Trigonometry, including circular measure, co-ordinates, trigonometric ratios, formulas, law of sines, law of cosines, solution of right and oblique triangles, applications to problems in Physics and Engineering.

Mathematics II

Co-ordinates, plotting of functions, interpolation, the straight line, curves represented by various equations, graphic solution of equations, determination of laws from the data of experiments.

Rate of increase, differentiation, determination of maxima and minima by differentiation, integration, definite integrals, determination of mean value, area and volume by integration, centre of gravity, moment of inertia, partial differentiation.

English I

This is a course in the principles of composition and letter writing. Special attention is given to spelling, punctuation and grammar.

The chief object of the work is to enable the student to write correct, lucid and easy business English.

English II

This course is a continuation of English I and is devoted to writing business letters, to descriptions of processes and machinery, and to all other possible means of enabling the student to express himself with accuracy and precision, both orally, and in writing.

Mechanical Drawing

The course extends through the first year. The instruction in Mechanical Drawing relates to the drawing instruments and materials, instrumental constructions and the drawing of irregular curves, tracing in ink, conventions, lettering, dimensioning, and working methods. The work includes several drawings of machine details.

Descriptive Geometry I

The course covers the simpler problems on the point, line,

and plane, and various constructions in the projection of solids including sections and developments.

In the latter half of the course the problems on the line and plane are completed, and the projection of solids is continued through the intersection of solids bounded by plane faces. Isometric drawings and several practical applications are given.

Descriptive Geometry II

The course is a continuation of Descriptive Geometry I and deals with single and double curved surfaces; their intersection by oblique planes, tangent planes, penetrations, development and so forth.

Lettering

The work consists of letter drawing, and stroke lettering for working drawings. The instruction is given by short lectures on the principles and processes of freehand drawing, and individual criticism. The latter part of the work is devoted to further work in letter drawing and stroke rendering, the construction of titles and title designing.

Applied Mechanics I

This is a course in the first year devoted to mechanics, with the idea of familiarizing the student with the fundamental principles of statics, stresses in frames and dynamics so that the work of the succeeding years will be more readily grasped.

Applied Mechanics II

The course comprises a study of statics, consisting of the general methods and applications of statics, including the determination of reactions, stresses in frames; of distributed forces, center of gravity; of moment of inertia, radius of gyration of plane areas and solids, including principal axes and principal moments of inertia; of kinematics and dynamics including the equations for uniform and varying rectilinear and curvilinear motion, centrifugal force, unresisted projectile, pendulum, harmonic motion, rotation, combined rotation and translation, momentum and angular momentum, center of percussion, impact, work, power and kinetic energy.

Applied Mechanics III

The course comprises a study of the strength of materials, mathematically treated, including the stresses and strains in bodies subjected to tension, to compression, and to shearing;

common theory of beams with thorough discussion of the distribution of stresses, shearing forces, bending moments, slopes, and deflections.

A study is also made of the theory of elasticity, including the determination of the resultant strains in any direction.

Applied Mechanics IV

The course treats of the laws of friction, including a study of the distribution of friction on shaft journals and pivots; also a study of the transmission of power by belting and by ropes, and of the friction reducing power of lubricating oils. A study is also made of the continuous girder, so planned as to apply to beams, and applications of the principles of Mechanics and of the Strength of Materials to the design of other forms of simple structures including re-enforced concrete.

Physics I

The subjects considered are general mechanics, molecular mechanics, wave-motion, electricity and optics, which topics are discussed both mathematically and experimentally. It is the purpose of the course to lay a thorough foundation for subsequent study of experimental, and technical physics. Hence it is planned with immediate reference to familiarizing the pupil with the fundamental principles of the science. The lectures are illustrated by suitable experiments.

Physics II

A course of experimental lectures which is a continuation of Physics I. In this work the student completes the study of physics started with Physics I.

Carpentry and Wood Working

This is a course designed to give students facility in the common operations of carpentering and cabinet work, together with the use and care of wood working machinery as lathes, saws, planers, etc. It is required of students whose practical work does not include such training.

Metal Working

This course is to train students in the common operations of metal working, as chipping and filing, forging, and machine work, as that done on lathes, drill presses, shapers and milling machines. It is required of those students whose practical work does not include such training.

Mechanism and Valve-Gears

This course includes a systematic study, not only of the motions and forms of the various mechanisms occurring in machines, and the manner of supporting and guiding the parts, independently of their strength, but also of the design of gear-teeth, and the study of the mechanisms found in modern American machine-tools. The course also includes the theory and practice of designing valve-gears for steam-engines, including the plain slide valve, link motions, radial valve-gears, double valves, and drop cut-off valves.

Mechanical Engineering Drawing

The instruction includes the drawing of simple machine details, such as bolts and nuts, screws, springs, keys, flanges, pipe fittings, etc.; teaching systems of dimensioning, conventional representations, and blue-printing; and the drawing necessary in connection with the course in Mechanism, such as problems in belting, quick return motions, etc. The latter part of the work consists of drawing, illustrating the class-room work in connection with the courses in Mechanism and Valve-gears including the design of cams, gear-teeth, slide-valves, double valves, the Stephenson link, etc.

Machine Drawing

The aim of the course is to teach the proper way of making the necessary dimensioned drawings for use in practice, good shop systems being adopted. The instruction includes the making of working detail and assembly drawings of machinery from measurements.

Boiler Drawing

The course is given in connection with the class-room work in boilers, and is intended not only to teach the method of drawing boilers, but to give the students more familiarity with the construction and details of steam boilers.

Thermodynamics

It includes a study of the principles of thermodynamics; a discussion of the properties of gases, saturated and superheated vapors, especially of air and steam; of the flow of fluids through orifices, nozzles, pipes and meters, a discussion of the action of the steam injector; a study of the various cycles of the hot air, internal combustion, and steam engines, of the turbine, air compressor, and refrigerator systems. These engineering

applications are treated from the physical, analytical and graphical points of view, so as to give the student a good foundation in the principles of thermodynamics, in the solution of actual heat engineering problems. The course also includes a study of the simple, compound and multiple expansion steam engine, of the different types of gas engines, of the gas producer, of compressed air and refrigerator machines, and the methods of testing such machines.

Power Plant Design

The course consists largely of drawing-room work and calculations, with such lectures as may be needed from time to time. The work of the course consists in making the working drawings necessary to show the location of boilers, engines, auxiliaries, piping, coal pockets, etc., for a power house, and also drawings and calculations of some of the details.

Heating and Ventilation

A course of lectures on the fundamental features and principles of the subject.

Dynamics of Machines

The course in Dynamics of Machines includes a number of the principal applications of Dynamics to moving machinery such as governors, fly-wheels, the action of the reciprocating parts of the steam-engine, running balance, whirling speed of shafts, etc.

Machine Design

The main object of the course is the application of principles already learned to the solution of problems in design. Each student makes a number of complete designs, such as a boiler, a large shaft with pulleys and gears, a set of couplings, a power shear, geared pump, etc. For each design the constructive details are carefully discussed; each student then makes all the necessary calculations to determine the dimensions of every part, and finally he completes the working drawings. The scope of the designs is such as to include most of the elementary principles of design, and [yet is sufficiently limited to enable the student to complete every detail, as it is believed that only by such thorough work can real benefit be obtained.

Foundations

The subjects treated in this course are as follows: building

stones and concrete, bearing power of different kinds of soil, examination of the site, designing the footings, whether of masonry, or of steel and concrete, independent piers, pile foundations, compressed air processes, freezing processes, retaining walls, together with some details of buildings for industrial purposes, constructed of steel, or of reinforced concrete.

Locomotive Engineering

This course includes a study of the form and proportions of the details of locomotives. Students make calculations of the stresses to which the various parts are subjected and thus learn to determine the strength of different members.

A study is made, also, of the compound locomotive, of train-resistance, of air-brakes, of heating cars by steam from the locomotive, of the modes of conducting locomotive tests, of the economy and performance of both simple and compound locomotives, as shown by tests, etc.

Engineering Laboratory

This consists of a series of exercises and tests on the water consumption of a steam-engine, as well as the fuel consumed, a determination of the horse power is also made.

Elementary Electricity

A course of experimental lectures taking up a consideration of static and voltaic electricity, batteries, electrolysis, magnetism and induction.

Practical Electricity

This course includes the following courses:—

Elementary Electricity

Elements of Electrical Engineering

Alternating Currents

Wiring

National Electrical Code

Intercommunicating Telephone Systems

Photometry

Electric Light and the Transmission of Power

Alternating Current Machinery

This course of lectures, recitations and problems is devoted to a careful discussion of the various types of alternating current machinery for the generation, transmission, and distribution of power. The special properties of each machine are con-

sidered for the machine as a unit, and when it is used as a part of any electrical system, some of the general considerations concerning long-distance power transmission are also included.

Elements of Electrical Engineering

This course of lectures, recitations, and problem work is devoted to the fundamental principles of Electrical Engineering. It includes a discussion of the laws and properties of electric and magnetic circuits, followed by an introduction to the study of variable currents and a treatment of the principles of direct current machinery. The solution of problems illustrating the engineering principles involved forms an important part of the instruction. A part of the course is devoted to the theory of direct current dynamos and the principles involved in their testing.

Alternating Currents

This course is virtually a continuation of the course in Elements of Electricity and concerns itself with the general theory of alternating current circuits, and the application of the principles to various engineering problems. In connection with the work, considerable importance is attached to the solution of problems selected with reference to their engineering application.

Electrical Engineering Laboratory

A course devoted to the study of direct-current machinery. The tests include the determination of characteristics, efficiency, regulation, and heating, and are supplemented by laboratory conferences.

Elementary Technical Electrical Measurements

This course is designed to familiarize the student with the most important electrical instruments and methods of measurement.

Intercommunicating Telephones

A course of lectures in the construction, operation and maintenance of factory intercommunicating telephone sets.

National Electrical Code and Wiring

A study of the various approved methods of wiring together with the specifications of the National Electrical Code.

Illumination and Photometry

A course of lectures and laboratory exercises dealing with

the engineering problems in the production, measurement and utilization of artificial illumination.

Central Stations

This course consists of lectures and assigned readings treating of the design, construction, and operation of electric power generating stations, including problems of management and questions of cost.

Electric Railways

A course of lectures including a discussion of the construction, equipment, and operation of different types of electric roads, together with related problems in power transmission and generation.

Electrical Engineering Laboratory

The work includes such tests as efficiency, heating, regulation, and determination of characteristics for alternating current machinery. The work in the laboratory is supplemented by conferences.

Principles of Dynamo Design

A short discussion of the materials of construction and methods of armature winding is followed by the electrical and magnetic calculations for a direct-current compound dynamo and a transformer.

Electric Light and Transmission of Power

A course considering the various problems of electric lighting and the electric transmission of power. The work consists of lectures and quizzes.

Surveying I

This course consists of a series of lectures, supplemented by exercises in the field and the drawing-room. The student is taught the use of the chain, tape, compass, solar compass, and transit, and the use of various forms of levelling instruments. The work in the drawing-room consists in making the computations which arise in the work of the surveyor, in making scale drawings, profiles, and contour maps from notes taken in the field, and in studying the application of contour maps in the solution of problems of drainage, road location, landscape engineering, etc. The text-book used is the Principles and Practice of Surveying by Professors Breed and Hosmer, Vol. I.

Surveying II

This course consists of lectures and work in the field and the

drawing-room. The instruction includes the use of the stadia and plane table in topographic surveys, of the sextant in hydrographic and astronomical work, of the barometer for determining differences of elevation, of the slide rule for computations the construction of stadia diagrams, and the making of topographic maps. The text-book used is the *Principles and Practice of Surveying* by Professors Breed and Hosmer, Vol. 2.

Topographical Drawing

This course consists of two hours per week in the drawing-room devoted to the study of the different conventional signs employed in making topographical maps. Each student is required to make a number of plates, and to become reasonably proficient in the preparation of such maps. Particular attention is given to the study of contour maps, and the solution of problems relating thereto.

Stereotomy

A series of exercises in the applications of Descriptive Geometry to the making of drawings for masonry structures such as intersecting walls and arches, abutments, piers, and culverts.

Highway Engineering

This course comprises an outline of the principles governing the location, construction and maintenance of roads, and the construction and maintenance of the various kinds of pavements for city streets.

Dynamical Geology

This course is an introduction to earth movements and the various terrestrial applications of solar energy. The greater geological processes, erosion, sedimentation, deformation, and eruption are discussed by lectures and lantern slides.

Theory of Structures

This course is devoted to class and drawing-room work in studying the loads, reactions, shears and moments acting upon structures of various kinds as roofs and bridges.

Materials

This course takes up a consideration of the properties of the various materials used by the engineer such as stone, brick, cement, concrete, wood, iron and steel.

Advanced Structures

This course treats of the computation and design of con-

tinuous girders, movable bridges and skeleton frames for buildings. Only the more simple cases are considered.

Heat Engineering

This is a continuation of the course in Thermodynamics in which the theoretical considerations of that course are applied to practical problems.

Hydraulic Motors

A series of exercises mainly recitations based upon a text-book, so as to embrace the laws of flow in open channels and of the dynamic pressure and work of water flowing over curved surfaces. The time is principally given, however, to a study of impulse wheels and reaction turbines, with reference to their proper construction, regulation, and testing, and to the various sources of loss of energy in their operation.

Hydraulic Engineering

This course is intended to illustrate the application of theory to practice, particularly along the lines of water power engineering, including the problems involved in a study of stream flow, storage and the general arrangement of water power plants.

Pattern-Work

The course includes instruction in Wood-turning having special application to Pattern-work, an illustrated discussion of the principles of moulding to explain clearly and show reasons for "Draft" on patterns and methods of allowing it, instruction in the use and making of core-boxes, and methods of building up patterns.

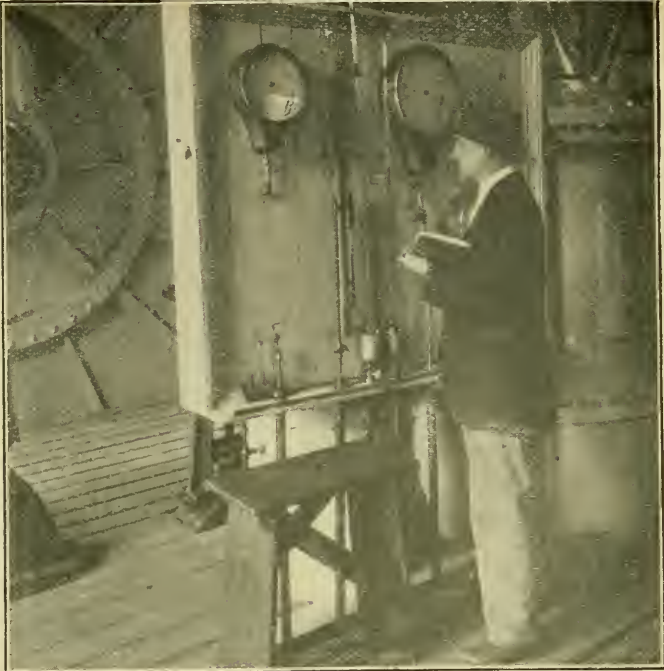
Structural Geology

This course consists of lectures on the broader structural features of the earth's crust, and the application of the principles of Structural Geology to practical engineering problems; and field and laboratory exercises in the study of the more common rocks, structures, and topographic forms.

Railroad Engineering

The course includes:—

Operations in location of a railroad: reconnoissance, preliminary survey, location. Reconnoissance: purpose governing topographical features; how carried on, instruments used. Preliminary survey: purpose, grades, pusher grades, length of line, curvature, rise and fall, organization of party, field work,



READING GAUGES
 Everett Works
 Boston Consolidated Gas Co.



CHECKING VOLTMETERS
 Head Place Station
 Edison Electric Illuminating Company

form of notes, plotting preliminary map. Location survey: field location, paper location, field work, form of notes. Simple curves; functions, degree of curve, relations between the primary functions, use of tables for curves, deflection angles, deflection distances, offsets from tangents, field methods, ordinates. Simple curve problems: substituting curves ending in parallel tangent, miscellaneous problems, obstacles on tangent and curve. Compound curves: problems, changing P. C. C. to end in parallel tangent, substitution of compound for simple curves. Reversed curves: connecting parallel tangents, connecting non-parallel tangents. Parabolic curves: horizontal, vertical curves. Turnouts, parts of turnouts, stub switch, split switch methods, connections of parallel tracks, yard computations, staking out turnouts. Turnout tables. Y tracks and crossing frogs: computation and layout of Y tracks, crossing frogs for straight and curved tracks. Easement curves: cubic spiral, Searle's spiral, methods of offsets and of reflection angles. Application to compound and reverse curves. Earthwork: slope stakes, cross-sections, different forms of sections. Methods of computing earthwork; averaging end areas, prismoidal formula, prismoidal correction and other methods. Correction for curvature, burrow pits. Earthwork tables and diagrams: their construction and uses. Haul, mass diagram. Yard design: freight yards, passenger yards, yard accessories, round houses, coal tracks, ash pits, etc. Track: track laying, ballast, rail, joints, drainage. Train resistance: level tangent resistance, curvature, grades. Economics: cost of distance, of curvature, of maximum grade, of rise and fall. Abolition of grade crossings: general problems. special problems, Chicago method of handling traffic, methods of handling work. Railroad signalling: block signals, interlocking signals.

Drafting

The course will be supplemented to some extent by drafting and by railroad designing.

Fieldwork

If necessary to illustrate the principles involved in the course, exercises will be given in the field on a few Saturday afternoons in the spring.

Reinforced Concrete

A course consisting of lectures and drafting, in which

instruction is given in the theoretical and practical principles involved in the design of structures of plain and reinforced concrete. The course includes a study of the simple reinforced concrete beam, the design of slabs, I-beams, columns, footings, retaining walls and arches. Instruction is given by means of lectures and text-books, in conjunction with which each student is given practical problems in design to be worked out in the drawing room.

Bridge Design

A course in which the students are instructed in the design of structures of wood, stone, and metal. Each student is given a set of data, and is required to perform all the computations and to make designs and working drawings for several structures, such as a plate girder bridge, a wooden roof truss, and a riveted or pin bridge. His work is criticized as it progresses.

Railroad Design

A drawing room course including problems in contour location; the proportioning of culverts and waterways; the design of track work, yards, station grounds and other practical railroad problems.

Chemistry I

The fundamental principles of the science are taught in connection with the descriptive chemistry of the non-metallic elements. The lectures are designed to precede the work of the laboratory, in which the students are expected to verify and illustrate the principles and facts which have been discussed in the lecture room. Careful manipulation, thoroughness in observation, accuracy in arriving at conclusions, and neatness in note-taking are required of each student, and the training afforded by this course is considered of value to all students whatever Course they may later select; for students of the Course in Chemical Engineering it lays the necessary foundation for subsequent chemical study.

Chemistry II. Analytical

A practical course in qualitative analysis for the separation and identification of the common metallic elements and the acids. Each student is also required to make a complete and accurate analysis of various mixtures, alloys and chemicals used in manufacturing. The laboratory work is supplemented by a course of lectures and conferences, devoted to a general study of the properties of the common metals and their compounds.

Chemistry III. Quantitative Analysis

A course in gravimetric and volumetric analysis. Special attention is given to accurate manipulation, the preparation of standard solutions, the calibration of instruments and to the principles of stoichiometry. The laboratory work is supplemented by a course of lectures and conferences.

Chemistry IV. Organic

A course consisting of lectures and conferences on the principles of organic chemistry as illustrated by the methane and benzene derivatives.

The student is required to prepare in the laboratory a number of organic compounds, selected to show characteristic organic reactions and to give training in the practical separation and purification of organic substances. After this synthetic work the students are given a practical course in organic analysis.

Industrial Chemistry

This course consists of a series of lectures and recitations upon the more important technical chemical processes, including those of Metallurgy. Much attention is given to the general operations common to many industries, such as crushing, grinding, lixiviation, filtration, evaporation, distillation, crystallization, etc., and to the details of various types of apparatus used for carrying on these processes. Some of the more important manufacturing industries, such as the production of alkali, fertilizers, glass, pigments, cement, soap, explosives, paper, as well as wood distillation, the refining of petroleum etc., are also considered in detail.

Metallurgy of Iron

A series of lectures taking up a general consideration of the Metallurgy of Iron and Steel. The introductory part is devoted to a discussion of the physical and chemical properties, and the constitution of cast iron, wrought iron and steel. This is followed by a more extended treatment of the production of cast iron, wrought iron, Bessemer, open-hearth, cement and crucible steel, and of foundry work. In the discussion of the different processes, principles of manufacture are made prominent.

Technical Analysis

A course consisting mainly of laboratory practice in typical methods of water analysis and gas analysis and, so far as the time permits, the study of procedures applicable to the proximate technical analysis of industrial products.

Equipment

Note.—At the time of going to press the buildings to contain these various departments are in process of erection to be completed in the fall of 1912.

DEPARTMENT OF PHYSICAL TRAINING

Our new gymnasium with all the latest modern equipment will give ample accommodation for all students.

There will be a running track on the grounds adjoining, together with tennis and hand ball courts; also a large natatorium where swimming will be taught by competent instructors.

MECHANICAL DEPARTMENT

Mechanical Laboratories

There will be a completely equipped steam engineering laboratory in the new building where students may make practical boiler and fuel tests, as well as study steam engineering practice. In addition to a complete modern power plant used for lighting and heating the buildings, there will be several engines used wholly for instruction purposes. The students also have the use of the equipment of our Automobile School, thus giving opportunity to study the most advanced ideas in gasoline engine practice.

MECHANICS ARTS LABORATORIES

There will be two large laboratories, one for metal work and the other for wood work. These will be for the use of those students whose practical work does not include courses of this character. The metal working laboratory is now in use in connection with the Automobile School and includes: one large and one small drill press, one large and one small engine lathe, a high-speed lathe, emery wheel, shaper, grinding machine, electric drill and milling machine, together with the necessary equipment for complete machine, and bench work instruction.

The wood working laboratory will include planers, saws, steam boxes and benches, together with all necessary equipment for complete instruction in practical woodworking.

LIBRARIES

There will be in connection with the School a professional library containing books pertaining to both the school work of the boys and to their practical work. In addition to this there will also be current periodicals on engineering and scientific

subjects for their exclusive use. All members of the School are entitled to take books from the Boston Public Library, and this offers a very unusual opportunity to our non-resident students.

DEPARTMENT OF CHEMISTRY

The Chemical Laboratories will have accommodations for more than one hundred and fifty students. The Department will comprise three laboratories, a lecture room, a reference room, a combustion room, a balance room, office and supply room. These laboratories will be equipped with the most modern apparatus for all lines of chemical work. For analytical work, there will be every facility for rapid and accurate work. In addition to this there will be all necessary apparatus for fuel and gas analysis as well as for a complete course in organic chemistry. The equipment of the laboratories will include vacuum and pressure apparatus, balances, electrolysis circuits, combustion furnaces, gas absorption and explosion apparatus, sampling apparatus and flue thermometers and gas calorimeter. There will be also testing machines for oils, viscosimeters, and different sorts of flash point apparatus. A chemical museum will be connected with this department where will be kept specimens for purposes of illustration.

PHYSICS DEPARTMENT

There will be a large laboratory devoted entirely to Physics, together with a lecture room.

The laboratory will be equipped with the most improved devices for instruction in general physical measurements including the mechanics of solids, liquids and gases, light and heat.

ELECTRICAL DEPARTMENT

The laboratory is well equipped with apparatus and possesses a set of instruments for teaching the principles of measurement including slide-wire and Carey-Foster Bridges, Laboratory Bridge, Portable Testing Set, Potentiometer, apparatus for testing insulation, together with a large assortment of minor apparatus which can be combined in many ways for the exigencies of any particular test which may be desired for some special instruction.

The equipment of instruments for practical measurement is very complete, consisting of a large number of Weston D. C. ammeters and voltmeters of various types ranging in size from 1 to 100 amperes and from 3 to 750 volts for use with direct currents, many of the ammeters being fitted with interchange-

able shunts, and the voltmeters with extension coils largely increasing their capacity and usefulness.

For alternating current work there are six Weston portable ammeters and eight Westinghouse switchboard ammeters, all fitted with current transformers for 6600 volt circuits with 50 and 25 ampere primaries and 5 ampere secondaries, also three with 60 ampere secondaries and three with 250 ampere secondaries. Also 4 Weston portable voltmeters and six Westinghouse switchboard voltmeters with 150 volt scales and all supplied with potential transformers of 10 and 20 to 1 ratio. Two G. E. switchboard type recording three phase wattmeters, and one Westinghouse round pattern one, three single phase induction type watt hour meters, several General Electric iron clad indicating wattmeters, and a pair of high torque General Electric Test meters.

There is also a large and complete equipment of auxiliary apparatus, as synchronizers, power factor indicators, frequency indicators, speed counters, tachometers, Prony brakes, and the many minor pieces of apparatus needed in practical testing and operating of machinery.

There are among machines:

A pair of specially made, matched machines, arranged to run either as single-phase, two-phase or three-phase generators or motors, as well as synchronous transformers, double current generators or, on the D. C. side as shunt, series or compound generators or motors, and also as three wire generators on the Dobrovolsky plan.

Two specially matched, 18½ horse, series motors fitted to a K-10 G. E. series-parallel controller, with brakes, etc., for efficiency and other tests.

A 60-Horse power 60 cycle single phase 500 volt alternator, a smaller (7½-Horse power) special G. E. 60 cycle 250 volt alternator revolving field, tapped for either 1, 2, 3, 6 or 12 phase currents and supplied with special *rotors* changing it into a synchronous, or induction motor of three types as well as into a frequency changer, a Thomson-Houston Inclined coil, compound generator, a 25-Horse power Westinghouse Compound generator, which can also be operated as a motor, and fifteen other direct and alternating motors of different types and sizes, these being used mostly for individual work.

There have recently been added three 16 kilowatt General

Electric Constant Current Transformers with 3.5 ampere secondaries and 2200 volt primaries, together with the transformers necessary to operate them from the large 60 kilowatt generator. Also a 2½-horsepower General Electric Induction motor for 60 cycles and 220 volts.

The laboratory equipment is as will be readily seen very complete and suitable for teaching in a thoroughly effective manner, while the few remaining lacunæ are being readily filled up. The total value of the present equipment being not far from \$12000.

In addition to the foregoing equipment we have been informed by the officials of the Massachusetts Institute of Technology that it could very probably be arranged for us to make use of their unexcelled laboratories and apparatus when we needed them, at times when they were not in use by their own classes, thus enabling our students to avail themselves of the finest experimental equipment in the country. As soon as our courses require more equipment than we have, steps will be taken to bring about the completion of negotiations to this end. At the time of going to press our evening school classes are using the Chemical Laboratories of the Institute, and it ought not to be a far step to a similar arrangement for our day work.

POST-GRADUATE OPPORTUNITIES

Students of good ability, on completing the Co-Operative Course, have the opportunity to attend the Massachusetts Institute of Technology if they care to, and by taking special extra work in the Co-Operative School during their course they could reasonably expect to complete the Technology work and get their degree in two years. Through conference with officials of the Institute, it has been found that those of our courses equivalent to theirs will probably be accepted in place of theirs, and the student given a clear record in such subject, either by passing an examination, or at the discretion of the head of the Department. Since a large number of our courses are covering the same ground as those at the Institute, a capable student should be able at the end of his course to get a clear rating at Technology for at least the equivalent of two years work there. This offers a rare opportunity for an ambitious capable young man to get the most valuable kind of an education at small cost.

General Departments

DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B. P. E. Director

The Physical Department is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative, Hygienic, and Educational Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts. Basket ball, baseball and athletics.

DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced development and attain a spiritual foundation for successful life work the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups, and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter.)

DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following social features.

A Newly Equipped Game Room. The Popular Novel Club.
The Association Congress. The Land and Water Club.
Popular Social Evenings.

DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

The Employment Department, is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 percent discount from the legal rates and special effort is made to notify them when good positions are open.

BOYS' DEPARTMENT

DON S. GATES, A. B., City Secretary

The physical, social, employment, and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Membership dues for the boys range from one to six dollars according to the privileges desired. Boys' work is also organized in the North End, the South End and Roxbury.

CATALOG
OF THE
EVENING POLYTECHNIC
SCHOOL

1912-1913

PUBLISHED BY THE
EDUCATIONAL DEPARTMENT
OF THE
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

2, 8 and 10 Ashburton Place until October 1, 1912

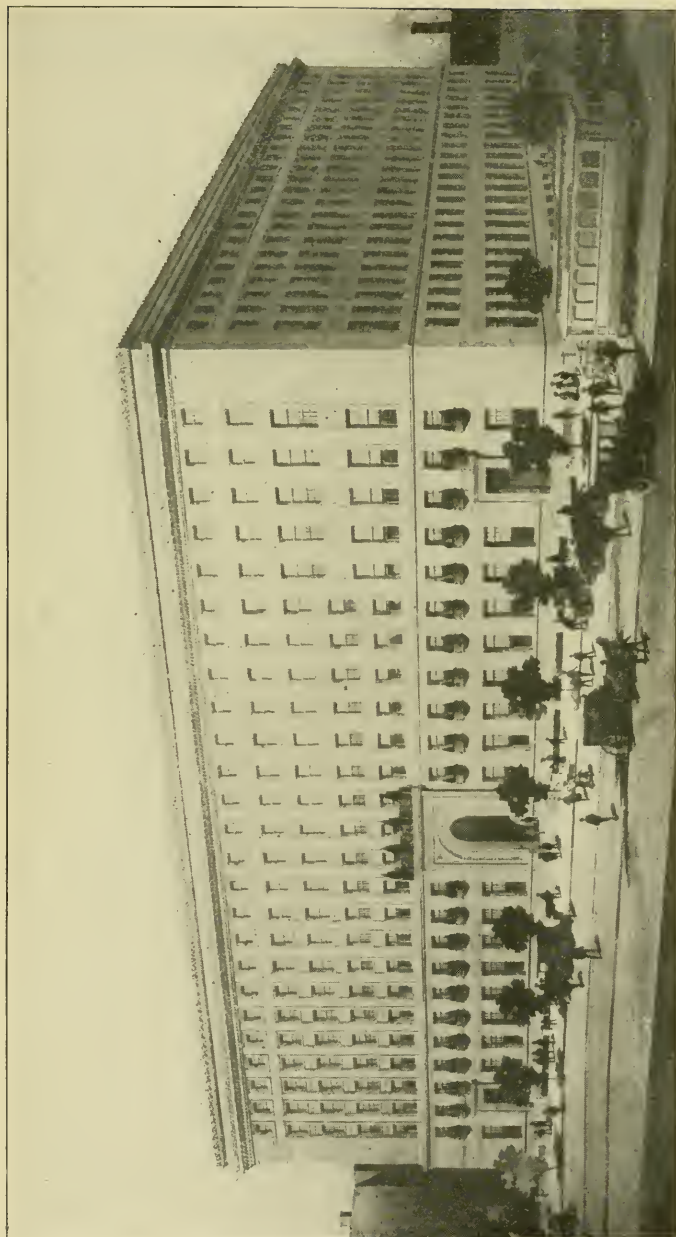
After January 1, 1913, 312 Huntington Ave., Boston, Mass.

CATALOGUE
of the
*Evening
Polytechnic
School*
1912-1913



Boston Young Men's Christian Association
Institute

Boston, Massachusetts
Published by the Young Men's Christian Association
1912



OUR NEW HOME

The above cut represents the new Association Building now under process of construction on Huntington Ave. It will contain among other features, school accommodations of the very best, a fine gymnasium, bowling alleys, swimming pool, cafe, dormitories, shops and laboratories, camera club rooms, social and recreative rooms and auditorium.

Calendar

- Oct. 3, 4, 5. Registration
- Oct. 7. Opening of term
- Oct. 12. Columbus Day, Holiday
- Nov. 28. Thanksgiving Day, Holiday
- Dec. 25. Christmas Day, Holiday
- Feb. 22. Washington's Birthday, Holiday
- April 19. Patriots' Day, Holiday
- April 25. Close of Winter Term

Officers of Administration

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION



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Chemistry

W. W. NORTON
Surveying

THOMAS E. PENARD, S.B.
Mathematics

CHARLES H. RESTALL, S.B.
Railroad Engineering

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Chemistry

ELLWOOD B. SPEAR, A.B., Ph.D.
Chemistry

GEORGE W. SWETT, S.B.
Mechanism

GEORGE A. TRUELSON
Architecture

Departments and Courses

DEPARTMENT OF ART

The department of art has acquired an enviable reputation by reason of the splendid instruction given and the success achieved by its students. The courses are varied and cover much of the field by reason of the versatility of the instructors. Great care is taken to develop the student along the lines of his natural inclinations, and, so far as is possible, to have the work of the school bear directly upon his daily employment and other courses attended. The work is thorough, complete and of a high professional order.

Freehand Drawing. MR. BROUGH

Considering the great importance of the study of freehand drawing to all who are engaged or anticipate being engaged in any industrial art, artistic trade, or profession, we offer a very complete course in this line, and call attention to the splendid advantages provided.

The work is adapted to the requirements of each individual student, so far as is practical and consistent with a thorough training in freehand drawing. There are two classes in both freehand drawing and industrial design.

Class I. The work of this class is intended to meet the wants of those students who have no previous knowledge of freehand drawing and is recommended to all students who intend to become craftsmen, designers, architects or artists, and also to others who may wish to take up the study as an accomplishment. The work will consist of drawing from typical models, by which students learn a sense of proportion and the principles of perspective; groups of still life for the study of composition and color; also drawing of historic ornament, details of the human figure from the cast, by which students are taught to observe form, and the principles of light and shade.

Class II. The course of study in this class is of a more advanced nature than that of Class I, and in addition to the

more complicated forms of ornament, the full-length human figure from the antique is added, also rendering in pen and ink and pencil, advanced shading in charcoal, painting groups of still life in monochrome and polychrome, in oil and water colors.

Industrial Design and Interior Decoration. MR. BROUGH

The courses in industrial design and interior decoration are specially helpful to those students who are already engaged in, or anticipate being engaged in, such arts and crafts, as wood and stone carving, wrought and bent-iron work, brass and copper work, stained glass, furniture and drapery, interior decoration, book covers, wall paper, fabrics and other allied industrial arts. No limitation is placed upon the student who shows ability to take up the work prescribed for the class he wishes to enter, and students who so desire may spend part of their time in the free-hand class and part in the industrial design and interior decoration class, without extra charge. The instructor is a certified art master and one of the leaders of the profession. Students in industrial design are recommended to take architecture.

Class I. The studies in this class include the work of the freehand drawing in Class I, with the addition of special studies given for the purpose of design, such as a systematic study of the various styles of historic ornament, studies of animal and plant form, and the elementary principles of design.

Class II. Students who have an elementary knowledge of drawing and design are considered eligible for this class and are taught the more advanced principles of composition, form and color in design, also rendering the same in various mediums, including charcoal, pencil, pen and ink, water and oil colors.

Illustrating and Cartooning. MR. MORSE AND MR. BARRETT

This class is under the supervision of Mr. C. H. B. Morse, assisted by Mr. Barrett.

The class meets three times a week, Tuesday, Thursday and Saturday. Mr. Morse will criticise on Tuesday and Saturday, and Mr. Barrett will have charge on Thursday. The first term the students will draw from the model to gain knowledge in proportions, anatomy, and the use of the different mediums used in rendering the figure. Weekly compositions for illustrations and cartoons will be submitted and criticised. The model will be used in working out the successful compositions.

The second term the model will pose for shorter sketches and will be drawn while in motion to secure natural and life like attitudes. The compositions and cartoons will be also continued, and the advanced students will receive instruction in facial expressions and character. The individuality of each pupil will be encouraged, and each will be advised as to the best use of his particular ability.

DEPARTMENT OF ARCHITECTURAL AND MECHANICAL DRAFTING

Instructors: MR. GEORGE A. TRUELSON, MR. HAROLD S. GRAVES,
MR. HARRY P. CROMWELL

The courses as outlined afford the essentials of drafting for those contemplating office work and are equally valuable and necessary to those working in the allied trades.

Architectural Drawing I. MR. TRUELSON

An elementary course, including the fundamental principles underlying all kinds of mechanical and architectural drawing; geometrical problems; orthographic and isometric projections and the orders of architecture.

In connection with this course the instructor will outline a course of reading in architectural history.

Architectural Drawing II. MR. TRUELSON

Practical architecture and details of construction. In this course the student is taught the component parts of buildings. Typical details of construction are drawn to a large scale and in isometric projection. This is preparatory to the drawing of complete plans, elevations and working drawings of some elementary problem which constitutes the work of the latter part of the year.

Special Students

Students desiring special work in this department, not outlined above, should consult with the instructor.

Mechanical Drawing I. MR. GRAVES; Assistant, MR. CROMWELL

A course for the first-year industrial students in mechanical drawing as follows:

General instruction: use of drawing instruments, T square triangles, etc. The course is based on sketches arranged for industrial students, by Mr. H. W. Smith of Pratt Institute, and includes simple projections in the form of working drawings, carefully dimensioned, nuts and screws, and oblique projections.

Lettering. MR. GRAVES.

Freehand lettering is of the utmost importance to all engaged in any line of drawing. No matter how well made a drawing may be, poor lettering will ruin its appearance, so that the student who expects to ever become a really valuable man, must be expert not only in draughting but in lettering also. No student will be graduated who cannot letter well.

Machine Drawing. MR. GRAVES.

The aim of the course is to teach the proper way of making the necessary dimensioned drawings for use in practice. The instruction includes: (a) The making of sketches of the parts of a machine from measurements; (b) the detail scale drawing from the sketches and a tracing; (c) an assembly drawing of the machine.

DEPARTMENT OF CHEMISTRY

DIRECTOR: ELLWOOD B. SPEAR, A.B., PH.D.

INSTRUCTORS: EDWARD MUELLER, A.B., PH.D. and MR. SAMUEL STRAHAN

The wonderful advance in the application of science to the arts during the past few years has caused a great demand for technically trained men. Nearly every large manufacturing concern now employs chemists regularly, or else has experts whom it can consult at short notice. The scientific and technical schools are each year sending out large classes of young men especially trained to meet this demand. For a young man to acquire this education requires four years at a scientific or technical school, in addition to the four years necessary for preparation at the secondary school, and an outlay of from two to three thousand dollars. These necessary expenditures of time and money are such that many young men, who are men-

tally capable of taking such courses, are obliged to give up their ambitions and fill inferior positions.

Formerly the practical knowledge which young men acquired by contact with their work was sufficient, but today the degree of specialization is such that a theoretical knowledge is essential to success in many industries where chemical processes are utilized.

There are many men who, by close application to the practical side, have acquired responsible positions in technical industries, but are unfamiliar with the theoretical side of their chosen work.

Such men are unable to advance in their special lines, because they cannot read the many valuable books written on special technical subjects, which presuppose a general knowledge of the theory of chemistry.

At the present time the requirements of admission to the higher institutions of learning, even for special students, are such that the doors are practically closed to these men, although many of them could take special courses with profit. Again, the only available hours for such men are during the evening. There is a demand, therefore, for a systematic evening course in chemistry, which will be open to men engaged at the present time in technical industries.

The Association Institute offers a thorough course in the general principles and applications of inorganic, organic and analytical chemistry, sufficiently complete to enable students to pursue their work with intelligence; to correlate theory and practice; to read technical works with profit; to test the quality and purity of chemicals and to become familiar with the laboratory methods of the trained chemist.

To men who have had some experience in chemistry and who can satisfy the head of the department that they can pursue the work with profit to themselves, special courses are offered in the analysis of steel, gas, oil, fuel, air, water, food and sugar.

The laboratories in the new building on Huntington Avenue are fitted with an excellent equipment in up-to-date apparatus, to give thorough instruction in all the courses offered.

Certificates will be given to those who have successfully completed the four-year course in general, analytical and organic chemistry.

The School makes a special effort to secure positions for those who have taken the course.

A laboratory deposit of three dollars for the first year, and four dollars for all other years, must be paid before desks will be assigned.

General Courses

Chemistry I. Elementary. DR. SPEAR

A course of lectures, supplemented by class room and laboratory work, on the elementary principles of inorganic chemistry. The course aims to familiarize the student with the fundamental laws of chemistry and with the preparation and properties of the important elements and their principal compounds.

Chemistry I is open to all men who show that they can pursue the course with profit. This course is especially fitted for those who wish to take the College Entrance examinations.

Chemistry II. Analytical. DR. SPEAR and MR. STRAHAN

A practical course in qualitative analysis for the separation and identification of the common metallic elements and the acids. Each student is also required to make a complete and accurate analysis of various mixtures, alloys and chemicals used in manufacturing. The laboratory work is supplemented by a course of lectures and conferences, devoted to a general study of the properties of the common metals and their compounds.

The course is elective for those who have completed Chemistry I, or an equivalent.

Text books:

College Chemistry, Smith.

A System of Qualitative Analysis for the Common Elements by A. A. Noyes.

Principles of Qualitative Analysis, W. Boettger (translated by W. G. Smeaton).

Chemistry III. Quantitative Analysis. DR. MUELLER

A course in gravimetric and volumetric analysis. Special attention is given to accurate manipulation, the preparation of

standard solutions, the calibration of instruments and to the principles of stoichiometry. The laboratory work is supplemented by a course of lectures and conferences.

Chemistry II and III will require two years for their satisfactory completion.

Text books:

Quantitative Analysis, E. W. Washburn.

Analytical Chemistry, Treadwell and Hall, Vol. II.

Chemistry IV. Organic. DR. MUELLER

A course consisting of lectures and conferences on the principles of organic chemistry, as illustrated by the methane and benzene derivatives.

The student is required to prepare in the laboratory a number of organic compounds, selected to show characteristic organic reactions and to give training in the practical separation and purification of organic substances. After this synthetic work the students are given a practical course in organic analysis.

Text books:

Organic Chemistry, 2 vols., Perkin and Kipping; Practical Methods of Organic Chemistry, Gattermann (translated by Schober.) Laboratory notes on Organic Analysis, by the instructor.

Chemistry IV is elective for those who have completed Chemistry III, or for those men who can satisfy the head of the department that they can pursue the course with profit.

Special Courses

Iron and Steel

A course in iron and steel analysis for the determination of phosphorous, manganese, carbon, sulphur, nickel, chromium and silicon.

Text books:

The Chemical Analysis of Iron, Blair.

On the completion of Chemistry III, or IV, the student may undertake a short thesis in inorganic, analytical, or organic chemistry. The chief object of this course is to give the student experience in the use of the original literature, as well as to acquaint him with the methods of scientific research.

Gas, Oil and Paints, Fuel

A course consisting of thirty hours, lecture and laboratory exercises, in each of the following:

The analysis of gases.

The analysis and testing of mineral, animal and vegetable oils.

The origin, manufacture, properties, uses and analysis of the various fuels and the determination of the heat value of fuels by use of a calorimetric bomb.

These courses may be taken singly if desired. They will be given after January 1, 1913, provided that a sufficient number of men apply.

Air, Water, Food, Sugar

Special courses will not be offered in these subjects until after October 1, 1913.

PHYSICS

INSTRUCTOR: MR. BALDWIN

This course appeals strongly to men engaged in technical work. Instruction is given in the practical application of physical laws. Problems are given throughout the year to test the pupil's knowledge of these laws. A fully equipped laboratory, accommodating thirty students working at one time, makes it possible to give the best of instruction. The exercises will be selected from the following subjects:

Mechanics

Density and specific gravity, simple machines, parallelogram of forces, friction, pendulum, strength of materials, laws of elasticity, liquids and gases.

Heat

Thermometry-coefficients, laws of expansion, specific heat, latent heat.

Light

Reflection, refraction.

Sound

Velocity, wave length, pitch.

Electricity

Magnetism, cells, electromotive force, resistance.

This course is especially fitted for those who wish to take the College Entrance examinations, and for such students a series of additional exercises is planned covering the work very thoroughly.

DEPARTMENT OF MATHEMATICS

INSTRUCTOR: THOMAS E. PENARD, S.B.

The importance of mathematics as a means of mental discipline, and as a necessary basis for those intending to pursue engineering as a profession, cannot be overestimated. The Association Institute offers a large number of courses in pure and applied mathematics adapted to the needs and ability of every student. Students wishing to take work in mathematics, other than that here offered, are urged to consult Mr. Penard.

Engineering Mathematics. MR. PENARD

The course outlined below is designed primarily for students taking the engineering courses at the Association Institute; it is hoped, however, that it will be found adapted to the needs of others who wish to obtain a practical knowledge of elementary mathematics. The student is assumed to be thoroughly familiar with the fundamental operations of arithmetic.

Algebra (40 Hours). MR. PENARD

Definitions and notation, fundamental operations, factoring, fractions, simple equations with applications to problems chosen from electricity and mechanics, solution of quadratic equations by formula, with applications to problems in electricity and mechanics, and graphical representation of functions, logarithms, and the use of the slide rule, with discussion of precision and rules for significant figures.

Geometry (20 Hours). MR. PENARD

Useful theorems relating to plane figures without proofs. Areas of polygons, measurements of the circle, the polyhedrons, the cylinder, the cone and the sphere, definition of the ellipse, hyperbola and parabola, measurement of irregular curves.

Trigonometry (10 Hours). MR. PENARD

Definitions of functions, the use of trigonometric tables, evaluation of formulas involving trigonometric functions,

examples from engineering, solution of triangles with examples taken from physics and engineering.

Trigonometry B. MR. PENARD

This course is more extended than the course outlined under Engineering Mathematics. It is especially adapted to the needs of engineering students who desire to continue with higher branches of mathematics, and students preparing for college examinations.

Analytical Geometry. MR. PENARD

Designed primarily for engineering students, but may be taken to advantage by those seeking general culture. Co-ordinates, loci, the point, the straight line, the circle, the conic sections, general equations of the second degree, co-ordinates in solid analytic geometry and interpretation of equations. The course is fully illustrated by practical problems.

Calculus. MR. PENARD

Differentiation and integration of algebraic functions, length of plane curves, area of plane surface, area of surface of revolution, volume of solid revolution, successive differentiation and integration, maxima and minima, transcendental functions, center of gravity and moment of inertia.

The division of the subject-matter according to classes of functions and the simultaneous treatment of differentiation and integration, make it possible to introduce applications to problems in physics and engineering from the start.

Descriptive Geometry. MR. PENARD

A course in this subject will be given provided there are enough students to form a class. Applicants must have attained proficiency in mechanical drawing.

For outline of College Mathematics see Preparatory School Catalog

DEPARTMENT OF SURVEYING

INSTRUCTOR: MR. JOHN W. HOWARD, S.B.

Course I. MR. HOWARD.

The course in surveying consists of four hours instruction each week in the theory of plane surveying and field exercises on Saturday afternoons in the fall and spring.

During the first term the field work consists of practice in the use of the transit and tape in making surveys for determining areas and for making plans. The class work includes methods of computing areas, subdividing land, and all of the common problems of plane surveying.

The second term is devoted chiefly to drawing. Students are required to plot a survey of a city lot on a scale of 40 feet to an inch, to draw a plate of conventional signs used in topography, and to plot a topographical map on a scale of 100 or 200 feet to an inch.

In the spring the field work consists of practice in using the level for establishing bench marks, running profiles, cross sectioning, etc. The class work includes problems in the use of contour maps, plotting profiles, estimates of earthwork, etc. If time permits instruction is given in stadia and plane table surveying.

Course II. MR. HOWARD

Triangulation: reconnoissance, base-line measurement, signal building, use of heliotropes, measurement of angles, calculation of triangles, calculation of geodetic positions.

Astronomical Observations: observations for latitude, observations for time and longitude, determination of azimuth.

Leveling: precise spirit leveling, trigonometric leveling, barometric leveling.

Topographic Methods: transit and stadia method, plane-table method.

Hydrographic Surveying: methods of locating soundings, use of sextant, measurement of stream flow.

Map Projections: study of the principal projections used in constructing maps.

Students completing the elementary course in surveying, or its equivalent, are qualified to enter this course.

This course will be given as outlined if ten or more students register.

DEPARTMENT OF RAILROAD ENGINEERING

INSTRUCTOR: CHARLES H. RESTALL, S.B., Assistant Engineer,
B. & M. R. R.

The course in railroad engineering consists of recitations, lectures and drawing. It includes the study of the following:

Railroad location as influenced by topographical features, purpose, grades, pusher grades, length of line curvature, rise and fall. Field work and making of location plans.

Computation and methods of laying out of simple, compound, reverse and easement curves. Circular and parabolic curves in connection with gradients. Practical curve problems.

Earthwork, slope stakes, cross-sections, burrow pits, methods of computations, tables and diagrams.

Frogs, switches, turnouts, cross-overs, crossing frogs, turnout tables, track, track laying, rail, ballast and drainage.

Yard design, passenger and freight yards, gravity yards, hump yards, yard accessories, stations, terminals, elimination of grade crossings, methods of construction and making estimates.

Draughting. The course will be supplemented to some extent by draughting and by railroad designing.

Fieldwork. If necessary to illustrate the principles involved in the course, exercises will be given in the field on Saturday afternoons in the spring.

Preparation. Algebra, geometry, trigonometry, surveying.

If not qualified by having passed the above subjects a student may be admitted as a special student on approval of the instructor of the course.

DEPARTMENT OF STRUCTURAL ENGINEERING

DIRECTOR: ROYALL D. BRADBURY, S.B.

INSTRUCTOR: JAMES M. BARKER, S.B.

Our various courses in structural engineering cover instruction in the theory and practice of draughting, detailing, estimating and designing. Thorough instruction is given by means of lectures and class room work in the important theo-

retical and practical principles of design, supplemented by the execution of detail drawings in the draughting room.

Our department of structural engineering is under the supervision of an experienced structural engineer. He is a man who has had experience both as a teacher and as a practitioner. Being a teacher at the Massachusetts Institute of Technology and also engaged in private practice as a Consulting Engineer he brings to our work both theory and practical experience.

STRUCTURAL I. MR. BARKER

Draughting and Detailing

(a) *Drawing*: Plate 1, detail drawing of floor beams. Plate 2, detail drawing of columns. Plate 3, detail drawing of roof truss. Plate 4, detail drawing of a plate girder. Plate 5, detail drawing of a highway bridge.

(b) *Details of construction*: During the preparation of these drawings the following subjects will be taken up in class-room work and fully explained: Determination of rivet values and design of riveted joints; proper method of designing splices and gusset plate connections; design of shoe plates; determination of rivet pitch, and conventional methods of laying out work about center lines.

(c) *Tracing and lettering*: especial attention will be given to proper methods of tracing and lettering detail structural drawings so that the student can execute acceptable work. Tracings of three plates will be required.

(d) *Elementary mechanics*: Instruction in the strength of materials will be given in so far as the work in the class requires.

Requirements for admission: Architecture drawing I, mechanical drawing I, or equivalent.

STRUCTURAL II. MR. BRADBURY

ASSISTANT, MR. BARKER

Steel Building Construction

(a) Elementary mechanics and fundamental principles: Laws of equilibrium, parallelogram of forces, force and equilibrium polygons, stress diagrams of simple framed structures.

(b) Strength of materials: bending moments, shear, de-

flection, moments of inertia, moments of resistance, radius of gyration.

(c) Details of construction: simple beams, plate girders, with calculations for rivet spacing, stiffeners, flange plates, shoe plates, etc.; design of columns with methods of calculating sizes, shapes and column bases.

(d) Roof trusses: loads and reactions, stress diagrams, riveted joints, splices, shoe plates, wind bracing.

(e) General building construction: foundations, footings and floors, brick, terra cotta, concrete and re-inforced concrete.

(f) Specifications: with special reference to steel work and foundations.

Requirements for admission: Completion of Course I, or its equivalent, experience in engineering, or architecture, and algebra, geometry and trigonometry.

STRUCTURAL III. MR. BRADBURY

ASSISTANT, MR. BARKER

Bridge Design

(a) Determination of stresses: different types of highway bridges, dead loads, live loads; determination of stresses in chords, determination of stresses in web, determination of wind stresses; different types of railroad bridges; maximum chord and web stresses from locomotive wheel loads; method of computing stresses by concentrated excess loads.

(b) Design: principles of economic design; methods of dimensioning tension and compression members, floor beams, stringers and bracing. Design of plate girder railroad bridge, design of steel truss railroad bridge.

Requirements for admission: Completion of Course II, or equivalent experience and education.

STRUCTURAL IV. MR. BRADBURY

Re-inforced Concrete Construction

(a) *Elements of Mechanics*: Laws of equilibrium, parallelogram of forces, reactions, bending moments, shear, centres of gravity, moments of inertia.

(b) *Strength of Materials*: Discussion of stress and strain, modulus of elasticity, elastic limit, ultimate strength, working stresses, common theory of beams.

(c) *Design of Plain Concrete*: Design of columns, footings, retaining walls, dams, etc.

(d) *Design of Reinforced Concrete*: Function and qualifications of the steel reinforcement, types of reinforcement; theory of the reinforced concrete beam; effect of continuity in beams, design of reinforced concrete beams, girders, floor slabs, roofs, columns, footings, walls, retaining walls, etc.

(e) *Specifications*: General discussion of various municipal laws and other specifications bearing upon concrete construction.

PREPARATION: Algebra, Geometry, Trigonometry.

If not qualified by having passed the above subjects, a student may be admitted as a special student on approval of the superintendent of the course.

SPECIAL COURSES

Plan Reading and Estimating

MR. DANIEL KNOWLTON, S.B., INSTRUCTOR

This is a course especially designed for carpenters, builders, contractors, architects and draughtsmen. It is not a course in drawing, but at once enters into the actual reading of plans, taking off quantities and estimating. A knowledge of drawing is not necessary and only simple arithmetic will be used. The instructor is one of the ablest estimators in the country, and a man capable of handling any phase of the work.

The course will cover thirty evenings' study from architects' plans and specifications, and includes short lectures each evening, covering the general building business and kindred subjects. The course will cover preliminary work in building surveys, shoring and excavation, masonry, cut stone, carpentry and hardware, and may touch upon plastering, structural steel, heating and plumbing, painting and glass and electric work.

This course will not be given in the year 1912-1913, unless a sufficient number of applicants register for it.

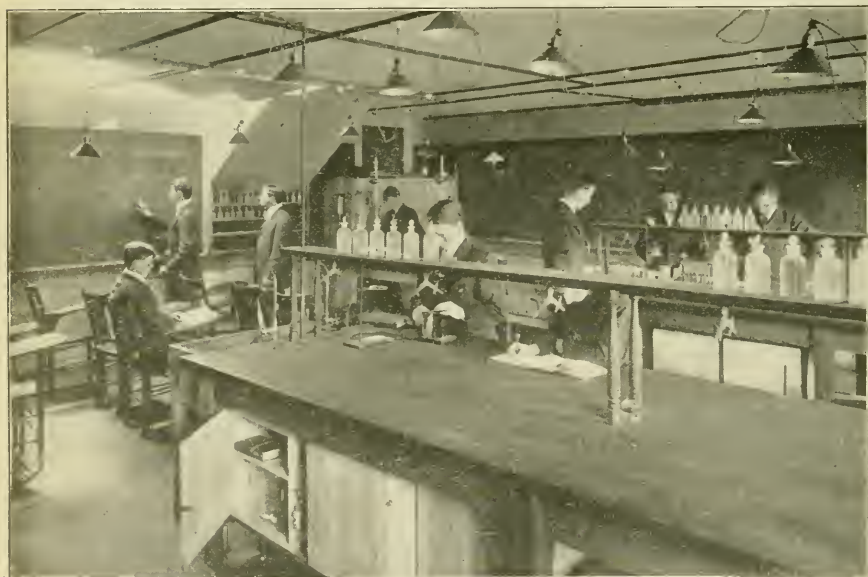
PRACTICAL MECHANICS AND MECHANISM DESIGN

MR. GEO. W. SWETT, S.B., INSTRUCTOR

The course in practical mechanics includes a discussion of the motions and velocities of the parts of a machine, methods



WINDOW DRESSING



CHEMISTRY I. LABORATORY

of designing cone pulleys and cams, and calculations of problems in belting, differential screws and worms and wheels. Link work in various forms is carefully treated, also the design of wheels in trains, and aggregate combinations, including pulley blocks, differential pulleys and epicyclic trains. The design of gear teeth will be taken up in the course, and some time will be given to a discussion of the production and strength of materials, with elementary problems. The mechanism design will be carried on in conjunction with the course in practical mechanics in the nature of home problems to be worked out on the drawing board. While not essential to a thorough understanding of mechanics, students will find the design course of great assistance. A knowledge of arithmetic is necessary for mechanics, while some familiarity with algebra is strongly advised. Mechanical Drawing I, or an equivalent, is required for admission.

(This course will not be given in the year 1912-13 unless a sufficient number of applicants register for it.)

Window Dressing

MR. HUGH J. KNOWLTON, INSTRUCTOR

The instructor in window dressing is a man of broad training and experience. He has been employed as window dresser in a number of leading commercial houses and elsewhere, and was formerly President of the Window Dressers' Association of America. His success with our men has been remarkable.

Our building is equipped with a display window and all the necessary forms, stands and materials for the actual display of goods. We also have made arrangements, with some of the leading stores, for the use of large quantities of dress goods, fabrics, underwear, hosiery and other material.

The course covers the care and handling of the material, color schemes and lighting effects, originality of design, general attractiveness, use of the fewest goods to the best advantage, simplicity, workmanship, condensing and expanding a window display, ornamentation of a window display, draping, pleating and puffing.

The length of the course is three months, the rate being \$10 a month, payable monthly in advance. The use of all appliances and material is free.

The course is repeated every three months throughout the year.

STEAM ENGINEERING

INSTRUCTOR: MR. BUXTON

A course fitting men for the State examinations for licenses for firemen of all classes; third, second and first-class engineers.

The exact requirements of Massachusetts relating to those who have the charge and management of steam boilers, heating plants and stationary engines, make it necessary for even firemen to hold licenses. In view of this fact large numbers of men desire to fit themselves for this work, and naturally wish to do so in the shortest time, at the least expense, and yet as thoroughly as possible. Having an extensive plant both direct and indirect heating and power, two boilers, pumps, tanks and other equipment, reinforced by a number of additional engines, gauges, reducing valves, gears, indicator, etc., we are prepared to continue the course whereby men are fitted for this line of work in a short time in the most thorough manner. Firing is required of all applicants unless they hold a fireman's license. They are then put to work on the boilers and engines, pumps, etc., and are led gradually into the other features of the work. One special feature of the work that makes it pre-eminent is that our machinery is in *motion* and that men are dealing with live issues.

Fireman's Course. MR. BUXTON

(a) Furnaces: how constructed, parts, boilers, setting, grate bars, care and management. (b) Boilers: how constructed, fittings, including safety valves, water column, try cock, hand-hole and man-hole plates, safety plug, blow-off cock, steam gauge, back pressure gauge, boiler feed, check valve, globe valves, injector, inspirator, also an explanation of the dry sheet and its protection. (c) General care and management of boilers. (d) Firing: care of fire, carrying fire, splicing and banking down, blowing down boiler and water column, scraping of tube-scales, blisters, bagging of sheet, foaming, cause of each and remedy, lining up furnaces. (e) Belts: taking up slack, putting on and off, lacing. (f) Oiling: cups and locations, kinds of oils, application to engine and dynamos. (g) Starting and shutting down of plant.

Engineer's Course. MR. BUXTON

(a) Pumps: setting of pumps and valves on same, putting in linings and packing, general care and management. (b)

Hancock Inspirator: its construction, action, care and management. (c) Injector: as above. (d) Slide Valve Engine: setting up, setting valves, taking up lost motion, parts and fittings. (e) Riding Cut-off Engine: as above. (f) Corliss Engine: as above. (g) Steam heating: construction and operation of high and low pressure systems: construction and operation of traps, reducing valves and feed-water valves.

SPECIAL NOTE—This course will open late in the fall of 1912 or early in 1913.

MARINE DEPARTMENT

For many years the Association Institute has offered a number of high-grade courses of particular interest to yachtsmen, motor-boatmen and those desirous of obtaining a knowledge of navigation, yacht designing and knotting and splicing.

At the time our building was destroyed these courses were discontinued but will be re-established in the fall of 1912.

Yacht Designing

This course is intended for those who wish a knowledge of designing from an amateur standpoint, but not with a view to becoming naval architects. Many students have designed their own boats, and some have been built with success up to forty feet over all. The course covers a period of two nights per week from 7.30 to 9.30, and the tuition fee is \$25, which includes membership in the Association.

Navigation

This course was given by us several years with marked success and includes alongshore and deep-sea navigation. The former for yachtsmen and the latter for officers and those desirous of securing a master's license. The course meets one night per week from 7.30 to 9.30. The tuition is \$15, which includes membership in the Association.

Motor Boat Engines

Our Automobile School is liberally provided with all types of gasoline motors including make and break, and jump spark. We also have all types of carbureters, etc., and are fully prepared to give thorough instruction in marine engines. The tuition depends upon the course taken, which should be selected from the catalog of the Automobile School, sent upon request.

Boat Building

Thousands of amateurs throughout the country yearly build boats at home, some from knock-down frames and others independently. The chance for getting a good boat when the work is not supervised and the equipment satisfactory, is slight. We are installing and thoroughly equipping a wood-working plant with a view to teaching boat building, and shall be prepared in the fall of 1912 to offer interesting and valuable instruction. The plan will be as follows:

Students upon entering will discuss with the instructor the type of boat they wish to build. Several with similar ideas will be grouped into a class. The boats will be designed under the direction of the yacht designing course. The lumber purchased for all of the boats and the members of the class will assist the boat builder in setting up and building boat No. 1. This boat will then be removed and the others will be built from the same moulds, and completed in turn, the boat builder giving less time as the students become more proficient, and when the last boat of the series is built the owners will draw lots and the boats be turned over to the respective owners. The cost will depend of course upon the type of boat selected and the size. The expense will include tuition, stock for the boat and fittings. It has been shown that boats by this plan will be well designed, well constructed and thoroughly satisfactory and will cost their owners for the stock plus the tuition in the school a saving of from 33 to 50 per cent over a similar boat purchased outside. Full details concerning this course will be announced later in the year and the right is reserved to omit the course if the number of applicants is insufficient. For full information address the Educational Director.

Knotting and Splicing

This is one of the most popular courses we have ever offered. It includes all types of knots and splices and the handling of rope and wire rigging, spars and sails. The instructor, Captain Nelson, was for many years mate of the training ship, "Enterprise" giving instruction to hundreds of boys who were preparing for the sea. The students must provide themselves with certain supplies which will be indicated at the time of joining the class. The tuition fee for this course is \$12, including membership in the Association for one year.

Special Announcement

A COURSE FOR FOREMEN, MECHANICS AND OTHERS
TRAINING THEM TO BECOME
TEACHERS IN INDUSTRIAL AND VOCATIONAL SCHOOLS

ADVISORY BOARD

HON. EUGENE N. FOSS, Governor
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FACULTY AND SPECIAL LECTURERS

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FREDERICK W. TURNER, Mechanic Arts High School
E. H. FISH, Worcester Trade School
MEYER BLOOMFIELD, Vocation Bureau, Boston
W. STANWOOD FIELD, Evening and Continuation Schools, Boston
A. K. SCOTT, Mechanic Arts High School
ALLAN K. SWEET

Others to be announced.

The American people have awakened to the fact so well recognized in Europe,—that a large percentage of the boys and girls should be taught useful occupations in school and that industrial schools will soon be a prominent feature in every system. One fact, however, makes the establishment of such schools most difficult; namely, the securing of competent teachers. Men who have been graduated from college or who have been employed as regular teachers are not skillful in the industries, having had no shop experience, and consequently are unable to give this form of instruction. The salaries paid industrial teachers are about equal to those paid for regular school work, and there is, therefore, no inducement for regular teachers to resign, serve an apprenticeship and then enter the work of industrial teaching.

THE FOREMAN'S AND MECHANIC'S OPPORTUNITY

It is clear that the ones who can most successfully qualify to teach such schools are those trained in the industries. An opportunity, therefore, presents itself for foremen and mechanics who have learned their trades and are skillful operators, foremen or managers, to add to their knowledge certain things required of the teacher and then enter this profession.

INDUCEMENTS

The inducements which such positions offer are many and attractive. There is a great demand for industrial teachers; the vacations are long, the work is pleasant, the employment steady, the positions in any community recognized, and the salaries range from \$1200 to \$1800, and over, per year. Some rare positions pay over \$2500.

COURSE OF STUDY

The course of study will group itself around the administrative and teaching problems growing out of Industrial Education. The social significance of the new problems—Types of Teachers—Applied studies and their relations to the industries—Types and limits of Vocational Education—Relation and part in the educational program.

TRAINING ESSENTIAL

The foreman, or mechanic, however, be he ever so skilful in his trade, cannot enter this field without certain definite instruction, including shop mathematics, shop drafting, shop science, the history of Industry, methods of teaching and other subjects relating thereto.

SUCH INSTRUCTION AVAILABLE

The Boston Young Men's Christian Association in conjunction with well-known industrial teachers and leaders, established in 1911 the first evening school of this kind in America for the training of men to enter this profession and the required subjects are fully presented by a corps of competent teachers.

LENGTH OF TERM

Instruction is offered during the evening hours, eight months per year, for one school year.

SESSIONS

The school is in session from 7.30 to 9.30 p.m., the number of evenings depending upon the program made up for each individual. In most cases three evenings per week are required.

INSTRUCTORS

The teaching staff has been selected with care and consists of practical men with teaching experience.

SUPPLEMENTARY LECTURES

Supplementary lectures are given by men of broad experience who are specializing in Industrial Education.

TUITION

The tuition for the year is \$60.00 which includes membership in the Association for one year. The tuition is payable \$20 on entering, \$20 December 1st and \$20 February 1st.

OPPORTUNITIES FOR EMPLOYMENT

The demand for teachers for industrial schools all over the country is very great and the number of available men insignificant. Competent men, therefore, completing this course and possessing tact and natural qualifications may feel reasonably sure of obtaining desirable positions.

The following students completed the course in 1911-12 and are now on the eligible list:

Ken C. Bryan	Everett D. Packard
G. Boardman Edwards	J. Horace Philbrick
Chas. L. MacGregor	Charles W. Price
Lawrence W. Wheelock	

Schedule and Tuition

Special Note—The following rates are in addition to membership (\$2.00). In case more than one course is taken, a discount of \$3.00 for each additional course will be made.

Course	Evenings	Time		Tuition
Architectural Drawing I	Mon., Fri.	7.00- 9.00		\$9.00
Architectural Drawing II	Mon., Fri.	7.00- 9.00		13.00
Calculus	Tuesday	8.00- 9.00	A	13.00
Chemistry I (Lecture)	Mon., Fri.	7.00- 8.00	BCD	24.00
(Laboratory)	Tuesday	6.30-10.00		
Chemistry II (Lecture)	Monday	7.00- 8.00	BC	39.00
(Laboratory)	Tues., Wed.	6.30-10.00		
Chemistry III (Lecture)	Monday	7.00- 8.30	BC	39.00
(Laboratory)	Tues., Wed.	6.30-10.00		
Chemistry IV	Tues., Wed.	6.30-10.00	BC	48.00
Engineering Math., Sect. I	Mon., Fri.	7.00- 8.00		13.00
Engineering Math., Sect. II	Mon., Fri.	8.00- 9.00		13.00
Engineering Math., Sect. III	Mon., Fri.	9.00-10.00		13.00
Firing	Mon., Wed., Fri.	7.30- 9.30	E	18.00
Freehand Drawing I	Tues., Sat.	7.30- 9.30		8.00
Freehand Drawing II	Tues., Sat.	7.30- 9.30		8.00
Geometry, Analytical	Tuesday	7.00- 8.00	F	13.00
Illustrating and Cartooning	Tues., Thurs., Sat.	7.30- 9.30	B	25.50
Industrial Design	Tues., Sat.	7.30- 9.30		8.00
Lettering	Mon., Fri.	6.30- 7.30		6.00
Machine Drawing	Mon., Fri.	7.30- 9.30		11.00
Marine Department—See pages 25-26				
Mechanical Drawing I	Mon., Fri.	6.30- 9.00		9.00
*Mechanism Design				
Physics	Mon., Wed., Fri.	8.00- 9.00	B	18.00
*Plan Reading and Estimating				
Railroad Engineering	Mon., Thurs.	7.30- 9.30	G	28.00
*Steam Engineering				
Structural I	Mon., Thurs.	7.30- 9.30	B	20.00
Structural II	Wed., Fri.	7.30- 9.30	B	30.00
Structural III	Mon., Thurs.	7.30- 9.30	B	35.00
Structural IV	Mon., Thurs.	8.30- 9.30	B	28.00
Surveying	Tues., Thurs.	7.30- 9.30	GJ	28.00
Trigonometry	Tuesday	7.00- 8.00	A	13.00
Window Dressing	Mon., Wed., Fri.	7.30- 9.30	K	33.00

*Courses omitted 1912-1913

A First term. B payable in three equal instalments: upon entering, December 1 and February 1. C A laboratory deposit of \$3 for Chemistry I and \$4 for all other courses in Chemistry must be paid before desks will be assigned. This fee will be credited toward the laboratory fee for breakages, etc. E Three months. F Second term. G \$8, payable upon entering; \$10 December 1; \$10 February 1. J Field work included. K Payable \$13 upon entering and \$10 per month in advance.

The tuition for all courses is payable in advance unless stated to the contrary, in which case times of payment are indicated.

Students who discontinue a course, but who have attended four or more recitations in the subject will be required to pay a term's tuition.

No student is permitted to transfer from one course to another without consulting the Dean beforehand and receiving a transfer order which must be presented at the main office for the proper ticket.

Additional Information

For courses in Electrical School see the Electrical School catalog.

Certificates are issued to students completing certain prescribed courses.

The Association reserves the right to retain for its annual exhibition, and for any other purpose which it may deem necessary, drawings made by students.

Scholarships

As an aid to worthy men who desire an education and are unable to pay in full even our slight charges, a limited number of scholarships has been provided, which will be judiciously distributed by the Educational Committee, to whom application should be made.

Entrance Requirements

Any man of good character regardless of age, occupation or creed, with adequate general education may be enrolled in the School.

A student may elect any subject or combination of subjects which best serves his particular needs. However, to prevent loss of time and expense to the student, he will not be allowed to elect courses which, on account of inadequate preliminary training and experience, he could not pursue with profit. The Dean should be consulted before registration.

Suburban Association Members

All tickets held by members of the Cambridge, Chelsea, Everett, Lynn, Malden, Melrose, Newton, Quincy, Salem and Somerville Associations will be honored for membership in the Boston Association.

For information not contained in this catalogue, call upon or address Frank P. Speare, Educational Director, 10 Ashburton Place, Boston. Telephone, Haymarket 145 until January 1, 1912. After January 1, 1912, address will be Huntington Ave., Boston, Mass.

Courses

COURSES IN THE DAY SCHOOLS

Alternating Current Machinery	German I
Advanced Structures	German II
Algebra I	German III
Algebra II	German IV
Arithmetic	Greek
Arithmetic, Commercial	History, American
Applied Mechanics	Hydraulic Engineering
Automobile, Operator's Road Course	History, Ancient
Automobile, Operator's Lecture Course	Heat, Engineering
Automobile, Operator's Laboratory Course	Hydraulic Motors
Automobile, Garage Course	Industrial Design
Automobile, Machine Shop Course	Industrial Chemistry
Bookkeeping, Advanced	Latin I
Bookkeeping, Elementary	Latin II
Bridge Design	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Lettering
Drawing, Freehand	Machine Drawing
Drawing, Mechanical	Materials
Dynamics of Machines	Mathematics, Engineering
Elementary Science	Mechanism Design
Electricity I	Metallurgy of Iron
Electricity II	Penmanship
Electricity III	Physics
Electric Light and Transmission of Power	Public Speaking
English I	Power Plant Design
English II	Railroad Engineering
English III	Shorthand I
English IV	Shorthand II
English, Business	Spanish
Foundations	Spelling
French I	Stereotomy
French II	Surveying, Plane
French III	Surveying, Railroad
French IV	Trigonometry
Geometry, Plane	Typewriting
Geometry, Solid	Thermodynamics
Geometry, Analytical	Topographical Drawing
Geometry, Descriptive	Theory of Structures
	Testing Materials
	Technical Electrical Measurements
	Valve Gears

COURSES IN THE EVENING SCHOOLS

Accounting Problems, Advanced	Firing
Agency	French I
Algebra I	French II
Algebra II	French III
Architectural Drawing I	French IV
Architectural Drawing II	Geometry, Plane
Architectural Drawing III	Geometry, Solid
Architectural Drawing IV	Geometry, Analytical
Arithmetic	Geometry, Descriptive
Arithmetic, Commercial	German I
Auditing, Advanced	German II
Auditing, Elements of	German III
Automobile, Operator's Road Course	German IV
Automobile, Operator's Lecture Course	Greek
Automobile, Operator's Laboratory	History, American
Automobile, Garage Course	History, Ancient
Automobile, Machine Shop Repair Course	Illustrating and Cartooning
Bankruptcy	Industrial Design
Bills and Notes	Italian
Bookkeeping, Elementary	Latin I
Bookkeeping, Advanced	Latin II
Business Organization and Administration	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Law, Special (in Law School)
Chemistry III	Lettering
Chemistry IV	Machine Drawing
Civil Service	Massachusetts Practice
Concrete I	Mathematics, Engineering
Concrete II	Mechanism
Constitutional Law	Partnership
Contracts	Penmanship
Corporations	Physical Geography
Cost Accounting, Elements of	Physics
Cost Accounting, Advanced	Physiology
Court Practice	Plan Reading and Estimating
Criminal Law	Pleading
Drawing, Freehand	Property I
Drawing, Mechanical	Property II
Economics, Applied	Property III
Economics, Principles of	Public Speaking
Elementary Science	Railroad Engineering
Electricity I	Sales
Electricity II	Shorthand I
Electricity III	Shorthand II
English I	Spanish
English II	Spelling
English III	Steam Engineering
English IV	Surveying, Plane
English, Business	Surveying, Railroad
Equity I	System Building, Advanced
Equity II	System Building, Elements of
Evidence	Torts
Preparatory School Subjects scheduled both Winter and Summer Terms	Trigonometry
	Typewriting
	Window Dressing

General Departments

DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B.P.E., Director

The Physical Department is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative, Hygienic, and Educational Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts. Basket ball, baseball and athletics.

DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced development and attain a spiritual foundation for successful life work the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups, and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter.)

DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following social features.

A Newly Equipped Game Room. The Popular Novel Club.
The Association Congress. The Land and Water Club.
Popular Social Evenings.

DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

The Employment Department is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

BOYS' DEPARTMENT

DON S. GATES, A.B., City Secretary

The physical, social, employment and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Membership dues for the boys range from one to six dollars according to the privileges desired. Boys' work is also organized in the North End, the South End and Roxbury.

CATALOG
OF THE
ELECTRICAL
SCHOOL

1912-1913

PUBLISHED BY THE
EDUCATIONAL DEPARTMENT
OF THE
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION
2, 8 AND 10 ASHBURTON PLACE, BOSTON, MASS.

ASSOCIATION INSTITUTE

ANNOUNCEMENT

OF THE

Evening School of Electricity

1912-13



Calendar

1912

Oct. 3, 4, 5. Registration

Oct. 7. Opening of term

Nov. 28. Thanksgiving Day, Holiday

Dec. 25. Christmas Day, Holiday

1913

Feb. 22. Washington's Birthday, Holiday

April 19. Patriots' Day, Holiday

May 8. Close of Winter Term

Officers of Administration



General Administrative Officers

ARTHUR S. JOHNSON, *President*
JACOB P. BATES, *Vice-President*
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SYDNEY B. HOSMER, *Superintendent of Installation Service, Edison Electric Illuminating Company*
GEORGE K. MANSON, *Assistant Chief Engineer, New England Telephone and Telegraph Company*



Faculty

WILLIAM LINCOLN SMITH, S.B., *Dean*
LOREN N. DOWNS, JR., S.B., *Alternating Current Theory and Laboratory*
RALPH M. GEORGE, S.B., *Direct and Alternating Current Laboratory*
HAROLD S. GRAVES, *Mechanical Drawing*
FRED G. HARTWELL, *Electrical Practice and Construction*
THOMAS E. PENARD, S.B., *Mathematics*
WILLIAM LINCOLN SMITH, S.B., *Electricity, Theory and Practice*

ANNOUNCEMENT

The Association School of Practical Electricity was opened in January, 1905, in response to an urgent demand for instruction of a thorough nature in this subject, including the handling of apparatus and suitable laboratory equipment. It can be readily appreciated that there is a vast difference between talking about things and *doing* things, and the fundamental basis of the school is to teach the student by having him perform the experiments and do the actual work. The success of the school, the interest of the men, and the quality of the work have been most satisfactory.

EXPERT ADVISORY BOARD

Before undertaking the establishment of a school so unique, an Advisory Board was secured, composed of men who are actively engaged in the large electrical industries in and around Boston, and who could bring to the Association the advice which comes from actual business knowledge of the needs of the great mass of electrical workers who have not had the opportunities of a technical education.

The instructing staff has been selected with great care from men who are eminently qualified to instruct in the special branches of electricity which have been assigned to them. Among them will be found teachers in technical schools as well as men taken from commercial positions in which a thorough knowledge of some branch of the art is absolutely necessary.

TWO DISTINCT TYPES OF WORK

Two distinct lines of work are offered by this school, both of which combine theory with the laboratory practice and personal instruction, features otherwise obtainable only in colleges.

The first of these consists of purely practical instruction along elementary lines covering those matters which are of interest and importance to Wiremen, Engineers, Building Superintendents, Janitors, and others of like interests. The courses of instruction given in this department are outlined in brief below, but no attempt has been made to give a detailed synopsis of the matters covered as it serves little useful purpose and it is much wiser for the prospective student to

interview the instructor personally, or if that cannot be done, by letter, as a much clearer understanding on both sides can be reached. Men often apply for a course which after a while turns out not to be the one best suited to their needs.

The second line of work consists of as thorough a course in general Electrical training and allied subjects as it is possible to give in three seasons of continuous study, and is planned for those who desire to obtain as complete a knowledge of electricity as possible but are not able or prepared to give their full time in attending a regular technical day school.

It is intended to make the program sufficiently complete both in theory and in practice to give the student an intelligent conception of electrical laws, apparatus and practice.

In both departments of the school the instruction is given by means of lectures and laboratory practice and in the latter the classes are taught by several instructors so that as far as possible the student is given personal instruction, it being intended that no instructor shall, if possible, be required to handle more than eight men at a time.

It should be understood, however, that every facility is allowed for a student to pass from one department to the other at any time provided that in the opinion of the Dean he can do so to advantage.

The One-Year Course is under the Supervision of Mr. Hartwell, to whom inquiries and requests for special information should be addressed.

OUTLINE OF THREE YEAR COURSE

First Year. Preparatory Studies

Mathematics: Monday and Friday evenings, one period per evening for thirty weeks.

Physics: Monday and Friday evenings, one period per evening for first twenty weeks. Laboratory work Wednesday evenings for first twenty weeks.

Mechanical Drawing: Monday and Friday evenings, one period per evening for ten weeks following the course in Physics.

General Electricity: Lectures Wednesday evenings, 6.30 to 7.30 for twelve weeks following the course in Physics.

Laboratory work on measurements etc., 7.30 to 9.15 Wednesdays of same twelve weeks and from 6.30 to 9.15 Tuesdays for last two weeks of term.

Second Year. General Courses and Direct Current Practice

The second year is rich in practical experience and keeps the student employed in installing, operating, measuring, and testing electrical devices. Upon the completion of this year the student can read scientific books understandingly and has much of the material requisite for success as a practical electrician.

The Lecture Courses are as follows:

- Course I. Electrical Measurements. Mr. Smith.
- Course II. Principles of Electric Wiring. Mr. Smith.
- Course III. Wiring Appliances, Fittings and Practical Methods.
Mr. Hartwell.
- Course IV. Theory of Dynamo Machinery and Direct Current
Machines. Mr. Smith.
- Course V. Theory and Practice of Direct Current Motors.
- Course VI. Direct Current Power Distribution. Mr. Hartwell.
- Course VII. Electric Lighting. Mr. Smith.
- Course VIII. Elements of Alternating Currents. Mr. Smith.

The Laboratory Courses are as follows:

- Course Ia. Electrical Measurements. Messrs. Smith and
George.
- Course IIa. Auxiliary Electrical Apparatus. Messrs. Hartwell
and George.
- Course IIIa. Construction and Operation of D. C. Dynamos.
Messrs. Hartwell and George.
- Course IVa. Elements of Testing of D. C. Generators and Motors.
Messrs. Smith and George.

The class meets three nights per week for thirty-two weeks and presumably on Tuesday, Wednesday and Friday nights.

At the beginning of the laboratory work if the class is large it may and probably will be necessary to divide it into two sections, in which case one section will presumably have laboratory work on

Wednesday and the other on Thursday, both sections meeting together on Tuesday and Friday.

For the first eight weeks no laboratory will be assigned. For the following twelve it will be assigned for one evening, hours from 7.15 to 9.15, but the laboratory will be open so that students may begin work at 6.30 if they desire. Students are assigned to experiments in groups of two or three and it is very necessary that attendance be regular as otherwise a serious disturbance of the work is caused.

For the last twelve weeks laboratory work is assigned for two evenings per week, and the two sections of the class will presumably meet as follows:

Section A, on Monday and Tuesday for laboratory work.

Section B, on Thursday and Friday for laboratory work.

Sections A and B on Wednesday for lectures.

This laboratory arrangement is made because practically all of the experiments require more than one evening for completion, and consecutive evenings are necessary so that the wiring arrangements and other connections made up by groups of one section shall not be disturbed by groups of the other section. Also because the nature of the work requires that close personal instruction which cannot be given unless the number of students per instructor is made as small as may be.

Third Year. Alternating Current Theory and Practice

The third year is given over to the discussion of alternating practice and theory and requires close application and hard study on the part of the student. The work is difficult but is daily becoming more and more important to the student who desires to qualify himself for successful progress in his vocation and to fit himself for success in positions which he may obtain, as practically all modern power distribution systems are alternating entirely or in part.

The Lecture Courses are as follows:

Course I. Theory of Alternating Currents. Mr. Downs.

Course II. Alternating Current Measurements. Mr. Downs.

Course III. Generators and Motors. Mr. Smith.

Course IV. Rotaries and Transformers. Mr. Downs.

Course V. Power House Engineering. Mr. Smith.

Course VI. High Voltage Distribution and Apparatus. Mr. Downs.

The Laboratory Courses are as follows:

Course Ia. Alternating Current Measurements. Messrs. Downs and George.

Course IIa. Operating and Testing of A. C. Apparatus. Messrs. Downs and George.

During the first fifteen weeks attendance is required on but two evenings, Tuesday and Thursday, but it is expected that a third evening will be spent in working problems and doing other necessary home work, imperative to satisfactory progress in the school.

During the last seventeen weeks three evenings are required, the third evening being decided to suit the mutual convenience of the majority of the class and the instructors.

COURSE IN DETAIL

General Electricity (1st year, last term)

Simplest electric phenomena. Opposite charges, early electric theories. The Electron theory. Conductor and insulator. Field of force. Law of inverse squares. Influence. Electrophorus. Influence machines. Capacitance and condensers.

Current flow. Electrolysis. Electrolytic dissociation. Voltaic battery. Modern theory of action. Electromotive force. Polarization. Reversible and irreversible cells. Types of batteries. The storage cell. Ohms Law, resistance. Divided circuits, Kirchoff's Laws etc. Heating effects of current.

Electric transfer of energy. The Joule and Watt. Power, etc.

The Magnet. Lode-stone. Formation of Magnets. Permanent and temporary magnets. Field of magnet, magnetic lines of force. Magnetic induction. The earth magnetized. How it becomes so. The electron current in the atom. Compass and variations. Dip. Theory of magnetism.

Oersted's discovery. Magnetic effects of a current. Field surrounding a current. Mutual action of current and magnet. Mutual action of two currents. Electro-magnets. Electro-magnetic induction. Lenz's law.

Light, electric and heat radiation compared. Hertz's experiments, Maxwell's theory. Etheric waves. Radiant energy.

Electrical Measurements. (2nd year, 1st term)

Necessity of measurement. What measurement is. Making of measurements. Direct and indirect measurements. Accuracy. Precision. Sources of error. Constant and variable errors. Laws of deviations. Curve of error. Average deviation. Huge error. Mistake. Representation of results. Analytical and graphical methods. Curve plotting. Choice of scales. Interpretation of curves. Interpolation and extrapolation.

Units. Legal electrical units. Working standards. Instruments: Ampere and Volt meters. Wattmeters, Bridges, etc. Sensitive galvanometers. Mirror and scale. Shunts, and other devices.

Methods of measurement. Current. Electromotive force. Resistance. Power. Capacity. Magnetic induction. Permeability, etc.

Calibration of instruments. Complete and detailed example of correct experimentation.

Principles of Wiring, etc. (2nd year, 1st term)

Preliminary considerations. Fire risk. National code. Examples of electrically caused fires. Systems of distribution. Two-wire; three-wire; multi-wire. Tree and pocket wiring. Drop in the line. Calculation of line loss. Size of wire for a given potential drop. Uniform feeder drop. Circular mils.

Systems of wiring. Cleat. Moulding. Rigid and flexible conduit. Knob and tube.

Wiring a house. Preliminary. Laying out circuits. Mains. Service switch. Cutout and meter. Switches. Control of lamps from different points. Sizes of wire. Carrying capacity. Tests.

Wiring fittings, appliances, switches, cutouts, fuses, cabinets, outlet boxes. Freak appliances, etc.

NOTE. In this course it is planned to have several special lectures by inspectors, insurance men, etc.

Dynamo Machinery

Magnetic field. Flux density. Magneto-Electric induction.

Magnetic permeability. Magnetomotive force. Reluctance. Magnetization curves. Air-gap. Joints in circuit. Heat effects. Residual magnetism. Cycles of magnetization. Hysteresis.

The Armature. Ring, pole, drum, disc. Field magnet excitation. Magneto. Series. Shunt and compound dynamos. Cross magnetization, sparking. Demagnetization. Cross reluctance. Cross compounding. Concentration of field. Self-compensating armatures. Eddy currents. Forms of field magnets. Magnetic leakage. Exciting ampere turns. Space factor. Armature windings. Commutator and brushes. Magnet yokes. Field poles. Field windings. Armature core bodies. Commutator construction. Characteristic curves. Efficiency curves. D. C. generators. Methods of driving representative generators.

Direct Current Motors

Fundamental principles. Motors and generators. Counter E. M. F., motor equation. Distortion of field. Efficiency. Losses. Motor laws. Speed and torque. Windings. Series, shunt and compound motors on constant potential circuits. Relations of torque, speed, field strength, armature conductors, lead, etc. Starting, stopping, reversing, series parallel control. Railway motors.

Distribution of Power

Power stations. Location. Choice of generating and transmission systems. Steam engines, reciprocating and turbine. Water wheels. Generators. Storage batteries. Auxiliary apparatus. Switchboards. Switchboard Equipment. Conductors. Wire. Distribution systems. Feeders and mains. Multiple wire systems. Pressure regulation. Overhead and underground systems. National Code rules. Statutory and Municipal regulations.

Sub-course on Management of Dynamos in connection with the laboratory work.

Electric Lighting

Historical. Incandescent lamps. Filaments. Voltage. Candle power. Arc lamps. High efficiency lamps. Illumination. Optical principles involved. Shades and reflectors. Photometrical determinations. House lighting. Halls, shops, etc. Street lighting.

Elements of Alternating Currents

Definitions. Armature cores and windings. Cycle. Frequency. Period. Advantages and disadvantages of alternating currents. Characteristic features of alternating currents. Comparison of power. Ohms and Joules laws as applied to D. C. and A. C. work. Kirchoff's laws. Graphic representation of alternating waves. Form factor. Instantaneous and average power delivered. Synchronism. Phase difference. Inductance. Capacity. Reactance. Impedance. Resonance.

Third Year Course

We do not attempt to give similar outline syllabi for the third year lecture courses because they are so closely interrelated that no sharp line of demarcation exists among them, but in general it may be said that the subjects are covered in full detail in a manner similar to the second year courses as described above.

Among the subjects treated in addition to those listed under the Alternating Course of the second year (which are here repeated with a treatment very much more in full) are the following:-

Theory of Alternating Currents

A C series circuit. Parallel circuits. Combinations of the above. Resonance in series and parallel circuits. The condenser as a compensator for lag. Single and polyphase systems. Y and mesh or Delta connections. A. C. measuring instruments and methods of measuring power in single and polyphase systems.

Alternators

General theory. Windings. Commercial types and ratings. Effective resistances. Armature reaction. Armature reactance. Regulation by exact and approximate methods. Generator losses and efficiencies. Guarantees as to regulation and efficiency and methods of checking the same. Parallel operation of alternators. Methods of synchronizing. Requirements for satisfactory parallel operation.

Transformers

General theory. Step up and step down transformers and their application to lighting and power work. Types of transformers.

Ratings. Constant current transformers. Instrument transformers. Auto-transformers. Regulation. Losses and efficiencies. All-day efficiency vs. instantaneous efficiency.

Motors

Synchronous Motors. Their field of usefulness. Use as a condenser for improving power factor and regulation of transmission lines. Induction motors. Theory. Commercial types. Field of usefulness. The Heyland or circle diagram as a means of studying the induction motor. Single phase induction motors and methods of starting the same. The A. C. series motor and its applications. The new G. E. Repulsion Induction Motor.

The Conversion of A. C. to D. C.

The synchronous converter. Regulation. Losses and efficiency of the same. The Mercury Arc Rectifier, its operation and usefulness. Its efficiency.

In this course a large number of problems are introduced which illustrate the principles taught and the solution of which are of great help in the understanding of the work. Frequent class-room recitations and problem work at the board give admirable opportunity for the clearing up of hazy points.

The treatment is by mathematical analysis and graphic diagrams and is planned in such a way as to overcome so far as possible the disadvantage of the lack on the part of the students of a knowledge of calculus and higher mathematics. The difficulties are presented as clearly as possible and special effort made to illustrate every principle by diagrams, curves and practical examples.

LABORATORY COURSES

Electrical Measurements

EXPERIMENTS. Resistance by substitution. Resistance by Ohms law. Resistance by direct deflection. Wheatstone Bridge. Measurement of Insulation resistance. Slide wire bridge. Variation of resistance with temperature. Specific resistance. Measurement of current by Electrolysis. Calibration of ammeter. Calibration of

voltmeter by potentiometer. Power measurement by calorimeter. Comparison of electrostatic capacities. Shunt method of measuring current. Magnetization of iron.

Auxiliary Apparatus

Study of circuit breakers. Test and action of fuses. Study of low tension ground detectors. Test of a lifting magnet. Test of a tractive magnet. Calibration of integrating Wattmeter. Test of meter torque. Study of constant-potential arc lamps. Study of incandescent lamps. Test of Wright demand meter. Study of Non-protected motor starter. Of a No-voltage release starter. Of an Overload release starter. Of a Distant-control starter. Of a fully protected motor starter and speed controller. Study of series parallel control.

Construction and Operation of D. C. Dynamos

Study of machine connections. Adjustment of brushes. Effect of reversed rotation, etc. Reversal of motor. Shop testing. Measurement of cold resistance. Mechanical inspection. Cold regulation. Sparking test. Temperature rise. Locating faults. Operating Shunt generators in parallel. Operating compound generators in parallel. Three wire distribution. Same with balancing set. Three wire generator. Study of Booster action.

Elements of Dynamo Testing

Testing of primary and secondary batteries. Measurement of armature circuit resistance. Relation between speed and voltage in an unloaded separately excited generator. Characteristic curves of a Separate — Shunt — Series — Compound Generator. Static torque of Series and Shunt motors on Constant potential circuit. Relation between speed and voltage at the terminals of shunt motor with constant field. Change of speed of same with field excitation, armature volts constant. Speed variation of same with variable terminal voltage. Load characteristics of a Shunt motor. Same of a Series motor on Constant potential. Of a Compound motor on Constant potential. The Stray power method of testing. Use of Calibrated motor as a Transmission dynamometer. Electrical supply of losses at Constant potential. Testing of railway motors.

Third Year Laboratory Course

This includes experiments on Calibration of Integrating Wattmeters. Voltage measurements on series circuits. Three Ammeter methods of measuring power in a single phase circuit. Efficiency test on single phase induction motor. Efficiency test on three phase induction motor. Stroboscopic and other methods of measuring slip. Transformer connections — series and parallel on single phase circuits, and star and mesh on three phase circuits. Transformer core losses. Efficiency of transformers. Ratio of transformation of transformer. Paralleling of alternators. Study of synchronizers. Ratio of transformation in Synchronous Converters. Efficiency of synchronous Converter. Characteristics (open and short circuit) of alternator, both single and three phase. Calculation of regulation. Synchronous motor operation and determination of V curves. Operation of Constant current transformer. Efficiency of constant current transformer.

OUTLINE OF THE ONE YEAR COURSE

In this Course it is intended to give as much theory as is necessary to the intelligent understanding of the principles which underlie the more common duties of an electrician and which are required for the proper conception of the subjects which the student may later read himself; together with as much practical experience in the handling of all the various parts of all kinds of electrical equipment as can be given in this length of time.

This course is designed for men who wish to obtain as much working knowledge as they can in a brief period without attempting the far more complete study of the theoretical principles and advanced matters which are given in the longer course. It should appeal to Engineers, Superintendents of Buildings, Janitors and others who are frequently called upon to perform certain lines of electrical work as well as those engaged in electrical work who know something along certain particular lines, but who wish to extend their knowledge and obtain experience along others as well.

The course consists of lectures and laboratory experiments on the following subjects:—

Electricity

Magnetism. Ohms Law. Power measurements. Batteries.
Open and closed types and their uses.

Bells

Different types, their uses and different methods of connecting, adjusting and testing. Annunciators, different types and uses. Burglar alarms, types and methods of installing and testing.

Gas Lighting

Different burners and auxiliary apparatus. Circuits and most common causes of trouble. Methods of testing for and diagnosing trouble.

Electric wiring

Old house work. New house work. Moulding. Conduit. Knob and tube and cleat work; these will be carefully explained as also connections for different switches and electrical fittings. These will also be discussed in demonstration lectures.

Testing for open, short and grounded circuits.

Two and three wire systems

Arc lights. Different types shown and connections and principle explained. Incandescent lights of different kinds.

Motor starting boxes

Controllers. Field rheostats. Purpose and methods of connection.

Motors will be taken apart and assembled properly, connected and operated—each part being explained with reasons for all connections, etc.

Fitting and setting brushes

Causes of sparking and means of remedying them.

The same matters in connection with Generators.

Parallel running of shunt and compound machines.

Switchboard—connections.

The above is not intended to be a fixed and unchangeable scheme but may be compressed in parts and expanded in others to suit the students needs. The class may be subdivided into sections which will put the major part of the time into different subjects.

Our equipment will enable the students to make all connections for a Two-wire Panel, and paralling of two Two-wire generators; also a Three-wire Panel and connections for paralleling two Three-wire generators; also for paralleling two Two-wire generators (in series) with a Three-wire generator. Also a Booster Panel and a Balancer Set Panel.

Although the course is fairly and clearly outlined it is extremely desirable that all who are interested call or write for further information and that each make his special wants known so that the real value of the course to him may be fully developed.

Men taking this course may enter the three-year course in either the 2nd or 3rd year as Special Students, but not to be considered for the three-year certificate except upon passing all requirements demanded of the regular men.

SPECIAL WIREMEN'S COURSE

A course of lectures nominally ten in number (although the number may be increased if necessary) will be given this season by Mr. Smith upon "The National Electrical Code" of rules governing the installation of Wiring and Apparatus. In this course the Code will be taken up and studied Article by Article, the purpose of each and the interpretation being considered. The lectures will be illustrated so far as possible, showing good and bad installations, cases of damage (both fire and life) where the same has been traced to faulty wiring will be considered, and doubtful points of what will probably be approved by Inspection Departments will be analyzed.

The text book used will be the 1911 Edition National Code and the Interpretation Dept. of Electrocraft conducted by the National Inspectors' Association. This association consists of a large number of Inspectors and other interested persons from all over the United States and Canada. It has an Executive Committee of 15 selected from different jurisdictions. Whenever a member meets with some controversial point in the Code, or argument between him and other parties at interest, he sends the question to the Secretary who submits it in general terms to the members of the Executive Committee, each of whom returns his individual decision; these are then collated and published from month to month in "Electrocraft," and thus become

although not authoritative by any formal action the best guide we have to the interpretation of the rules by selected men throughout the country.

In connection with this course it may be stated that Mr. Smith is the Municipal Electrical Inspector for the town of Concord, and also Secretary of the Massachusetts Association of Municipal Electrical Inspectors as well as of the National Electrical Inspectors Association. This course if intelligently pursued cannot fail to be of great value to men practically engaged in the business of wiring buildings, and it is hoped that men taking it will bring forward all possible questions on the Code which arise in their own experience or in that of acquaintances in the business.

This course will be required of 2nd-year men; and of all one-year men who wish to handle wiring problems. It is also open at a moderate fee to any who desire to become more conversant with the Code and with the position of Inspectors regarding it.

LABORATORY

The laboratory is well equipped with apparatus and possesses a satisfactory set of instruments for teaching the principles of measurements including Slide-wire and Carey-Foster Bridges, Laboratory Bridge, Portable testing set, Potentiometer, apparatus for testing insulation, together with a large assortment of minor apparatus which can be combined in many ways for the exigencies of any particular test which may be desired for some special instruction.

The equipment of instruments for practical measurement is very complete consisting for use with direct currents of a large number of Weston D. C. ammeters and voltmeters of various types ranging in size from 1 to 100 amperes and from 3 to 750 volts, many of the ammeters being fitted with interchangeable shunts, and the voltmeters with extension coils largely increasing their capacity and usefulness.

For alternating current work there are six Weston portable ammeters and eight Westinghouse switchboard ammeters, all fitted with current transformers for 6600 volt circuits with 50 and 25 ampere primaries and 5 ampere secondaries, also three with 60 ampere secondaries and three with 250 ampere secondaries. Also 4 Weston portable voltmeters and six Westinghouse switchboard voltmeters with 150 volt scales and all supplied with potential transformers of 10 and 20 to 1

ratio. Two G. E. switchboard type recording three phase wattmeters, and one Westinghouse round pattern one, three single phase induction type watt hour meters, several General Electric iron clad indicating wattmeters, and a pair of high torque General Electric Test meters.

There is also a large and complete equipment of auxiliary apparatus, as synchronizers, power factor indicators, frequency indicators, speed counters, tachometers, Prony brakes, and the many minor pieces of apparatus needed in practical testing and operating of machinery.

There are among machines:

A pair of specially made, matched machines, arranged to run either as single-phase, two-phase or three-phase generators or motors, as well as synchronous transformers, double current generators or, on the D. C. side as shunt, series or compound generators or motors, and also as three wire generators on the Dobrovolsky plan.

Two specially matched, $18\frac{1}{2}$ horse, series motors fitted to a K-10 G. E. series-parallel controller, with brakes, etc., for efficiency and other tests.

A 60-Horse power 60 cycle single phase 500 volt alternator, a smaller ($7\frac{1}{2}$ -Horse power) special G. E. 60 cycle 250 volt alternator revolving field, tapped for either 1, 2, 3, 6 or 12 phase currents and supplied with special *rotors* changing it into a synchronous, or induction motor of three types as well as into a frequency changer, a Thomson-Houston Inclined coil, compound generator, a 25-Horse power Westinghouse Compound generator, which can also be operated as a motor, and fifteen other direct and alternating motors of different types and sizes, these being used mostly for individual work.

There has recently been added three 16 kilowatt General Electric Constant Current Transformers with 3.5 ampere secondaries and 2200 volt primaries, together with the transformers necessary to operate them from the large 60 kilowatt generator. Also a $2\frac{1}{2}$ horsepower General Electric Induction motor for 60 cycles and 220 volts.

The laboratory equipment is as will be readily seen very complete and suitable for teaching in a thoroughly effective manner, while the few remaining lacunæ are being readily filled up. The total value of the present equipment is not far from \$12000.

ADDITIONAL INFORMATION

In addition to the above regular courses of the School it is intended that, if sufficient men apply to cover the cost, courses will be given on the subject of wireless telegraphy, induction coils and firing systems for gasoline engines, etc.

Also should a sufficient number of men apply to warrant the formation of a class it is intended to arrange for a lecture and laboratory course in telephony. This, however, would hardly be warranted for a less number than fifteen and twenty would be better as the expense of instruction and laboratory equipment would be large.

Students in the regular second-year course would not find it possible to take this in addition to their regular work but might substitute it for a part of the same, after considering the matter with the Dean.

Although the second and third year courses of the long technical course are integral parts of the same the work has been planned so far as possible to allow of any man having sufficient knowledge, entering at any point as a regular student after satisfying the instructors of his capacity to carry on the work without hindrance to the other men; or as a special student for such particular parts of the work as he may desire. Thus he may take either the whole of the second-year work, or any one or more of the courses which appeal to him, and the same in the third year. The expense will be arranged in each individual case according to its particular nature.

METHOD OF WORK

The object of all the laboratory work of the Electrical School, is to have the student expand the knowledge he has received from the lectures and reading by learning through his finger tips; to have him absolutely handle the object under discussion; to adjust, measure, and test electrical machinery; to become familiar with dynamos, motors, electric wires, and in fact to get an intelligent conception of the entire problem from a practical standpoint. In addition to the foregoing, however, we aim to supply sufficient theory so that the student may know why certain things are done, enabling him thereby to become a skilful operator and one capable of growth and development.

RESULTS

Good work in this school depends, of course, first of all, upon the intelligence and application of the student. When a man is in earnest and attends regularly, he can acquire an intelligent conception and a working knowledge which has a direct and absolute commercial value. He will be head and shoulders above the inexperienced man who endeavors to enter these fields. He will be alert and active mentally, and sufficiently well trained so that he may, with the aid of good textbooks, follow along this line into the higher branches of the art.

CERTIFICATES

Upon the satisfactory completion of the Three-Year Course the student will be entitled to receive a diploma under the seal of the Association and signatures of its officers, as follows:

THE ASSOCIATION INSTITUTE

of the

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

hereby presents this certificate to

.....

in the

SCHOOL OF ELECTRICITY: THREE-YEAR COURSE

in testimony of his satisfactory completion of the general and special studies required in said School for obtaining said Certificate, as scheduled upon the back hereof.

Given under the seal of the Association at Boston, Mass., this.....day of.....one thousand nine hundred and.....

.....President.Educational Director.

.....General Secretary.Dean.

.....School

“Satisfactory completion” means here the attaining of at least 75 per cent average throughout the course, first upon the quizzes and second upon the examinations in each course of lectures. The same average is necessary upon the worked-up results of the experiments in the laboratory courses, in which neatness, lucidity and promptness in work will be considered. Furthermore the several instructors must feel satisfied that the student has shown an intelligent grasp of the principles and such power of planning and working out of experimentation in the laboratory, which indicates a capacity for satisfactorily carrying through problems or other tasks set him in general outline by his employer.

Certificates have been presented in June, 1909, to the following students:

June 1909		
Edwin A. Locke	Belmont.	<i>Cum Laude</i>
John Pearson	Melrose.	<i>Cum Laude</i>
Alfred R. Buzzelle	Cambridge	
Joseph H. Clapp	Dorchester	
Charles W. Leet	East Boston	
Rufus R. Moore	Roxbury	
Edward R. Sears	East Boston	
Ernest W. Trelawney	Auburndale	

June 1910		
Hartin Selian	Dorchester	<i>Magna cum Laude</i>
Michael J. English	South Boston	<i>Cum Laude</i>
Walter F. Blaisdell	Somerville	
Charles W. C. Boundy	Cambridge	
Alfred J. Crockford	Malden	
Lyder C. Gullackson	Malden	
Louis S. Howland	So. Braintree	
Raymond Skinner	Arlington	

June, 1911		
Frank Obata	Boston	<i>Magna cum Laude</i>
Edward S. Mills	Somerville	<i>Cum Laude</i>
Warren E. Denton	Quincy	
Albert G. Ilse	Allston	
Donald B. McKay	Boston	
Horatio D. Roberts	Boston	

ENTRANCE REQUIREMENTS

Any man of good moral character regardless of occupation, religious belief or age who, in the opinion of the Educational Director and Dean is sufficiently mature to carry on the technical work with advantage may enter the school.

TUITION FEES

One-Year Course

\$25 per year, payable as follows; \$15 upon entering; \$10 February 1.

Three-Year Course

First year, \$35, payable as follows: \$15 upon entering, \$10 December 1, and \$10 February 1.

Second and third years, \$50 each payable as follows: \$20 upon entering; \$15 December 1, and \$15 February 1.

Special Wiremen's Course

Eight dollars, or for members of the Association, \$3, but no extra

charge will be made to those students in the Electrical School for whom this is required work.

NOTE. The above rates include membership in the Association.

Should any person already a member of the Association desire to take but one or more of the scheduled second or third year courses he may do so for the sum of \$2.50 each, upon presenting evidence to the Dean of his ability to successfully and advantageously pursue the same. Persons not members have the same privilege upon taking out an educational membership.

The number that can be accommodated in this way is limited by the size of our lecture rooms and the number attending our regular classes.

Students who discontinue a course, but who have attended at least four or more recitations on the subject will be required to pay a term's tuition.

No student is permitted to transfer from one course to another without consulting the Dean beforehand and receiving a transfer order which must be presented at the main office for the proper ticket.

ADDITIONAL INFORMATION

Examinations are held at the close of each course and term.

Students who are obliged to be absent from any classes should notify the Dean in advance of same.

Scholarships

As an aid to worthy men who desire an education and are unable to pay in full even the slight charges, a limited number of scholarships has been provided, which will be judiciously distributed by the General Secretary, to whom application should be made.

Suburban Association Members

All tickets held by members of the Cambridge, Chelsea, Everett, Malden, Melrose, Newton, Quincy and Somerville Associations will be honored for membership in the Boston Association.

For information not contained in this catalogue, call upon or address Frank P. Speare, Educational Director, 10 Ashburton Place, Boston. Telephone Haymarket 145; or W. Lincoln Smith, Dean, Concord, Mass.,—telephone Concord 196.

DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B. P. E. Director

The Physical Department is under the best supervision and

the aim is to better fit men for their life work by increasing their efficiency through exercise. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts. Basket ball, baseball and athletics.

DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

Although mental training makes a young man keen, and physical exercise agile and strong; yet, without the additional moral and spiritual development secured through knowledge of the principals of life laid down by the Great Teacher and striving to make them his own, his career may be a complete failure.

The Association, therefore, advises each member in planning his winter schedule to arrange to take advantage of one or more of the following special features:—

Bible Study, Sunday Meeting of Men, Personal Service Groups, and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter.)

DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following features among others:

A Newly Equipped Game Room	The Popular Novel Club
The Association Congress	The Land and Water Club

DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

The Employment Department is, in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25% discount from the legal rates and special effort is made to notify them when good positions are open.

BOYS' DIVISION

DON S. GATES, City Sec'y

The physical, social, employment and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Membership dues for the boys range from one to six dollars according to the privileges desired. Boys' work is also organized in Roxbury.

CATALOGUE OF THE
**AUTOMOBILE
SCHOOL**
1912-1913



Boston Young Men's Christian Association
HUNTINGTON AVENUE :: BOSTON, MASS.
:: 10 ASHBURTON PLACE, UNTIL OCTOBER 1, 1912 ::

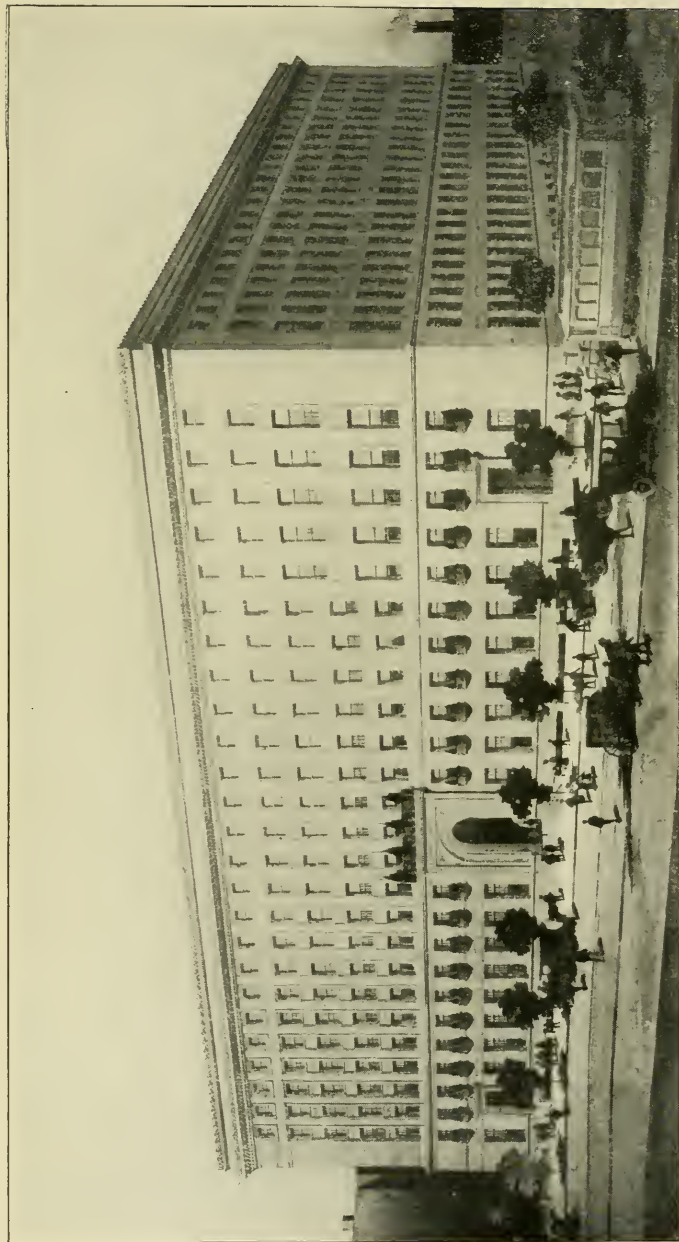
CATALOGUE
of the
**Automobile
School**

1912
- 1913



Boston Young Men's Christian Association
Institute

Boston, Massachusetts
Published by the Young Men's Christian Association
1912



OUR NEW HOME

The above cut represents the new Association Building now under process of construction on Huntington Ave. It will contain among other features, school accommodations of the very best, a fine gymnasium, bowling alleys, swimming pool, cafe, dormitories, shops and laboratories, camera club rooms, social and recreative rooms and auditorium.

The educational portion of the building will be ready for occupancy October 1, 1912

The Automobile building is directly in the rear.

Officers of Administration



General Administrative Officers

ARTHUR S. JOHNSON, *President*

JACOB P. BATES, *Vice-President*

HAROLD PEABODY, *Recording Secretary*

FRANCIS B. SEARS, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*



Educational Committee

JOHN ROUSMANIERE, *Chairman*

WILLIAM E. MURDOCK

ALBERT H. CURTIS

MORGAN L. COOLEY

GEORGE P. HITCHCOCK



Educational Administrative Officers

FRANK P. SPEARE, *Educational Director*

GALEN D. LIGHT, *Asst. Educ. Director and Bursar*

H. W. GEROMANOS, *Supt. of Evening School System*

IRA A. FLINNER, *Supt. of Day School System*

CHARLES B. GRAY, *Secretary*



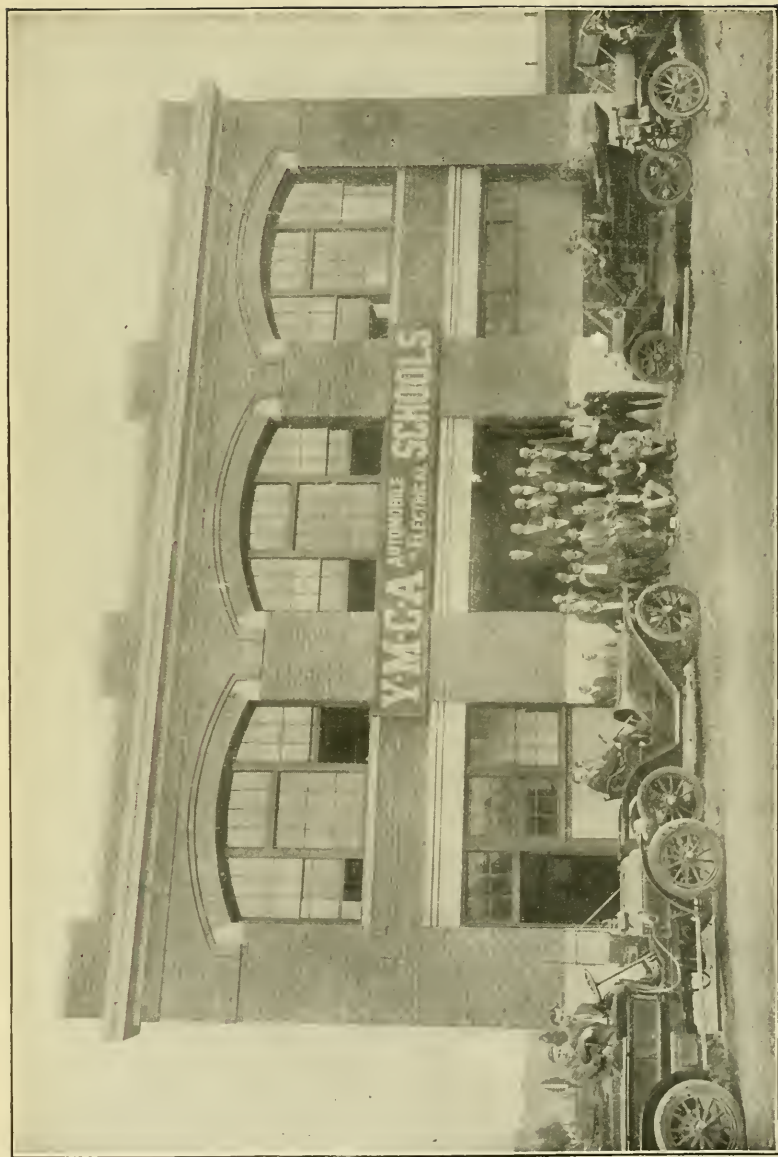
Advisory Committee

ELLIOTT LEE, *Ex-President Mass. Automobile Club*

J. S. HATHAWAY, *Manager White Car Co.*

C. F. WHITNEY, *Automobile Dealer*

CHESTER I. CAMPBELL, *Manager Boston Automobile Show*



NEW BUILDING BOSTON Y. M. C. A. AUTOMOBILE SCHOOL

Faculty



WINTHROP C. HOSFORD
Manager and Lecturer

ARTHUR ASHWORTH
Supt. Machine Shop Repair Course

JAMES W. BENNETT
Supt. Garage Course

ROBERT A. CHANDLER
Asst. Lecturer and Laboratory Instructor

ALBERT N. CHITTENDEN
Road Instructor

JOHN F. EVERIN
Instructor in Garage Course

LEONARD E. FROST
Instructor in Laboratory Course

CHAUNCEY S. GREENE
Supt. of Laboratory Course

CHARLES L. PIERCE
Supt. of Tool Room

WILLIAM H. REID
Road Instructor

ROLLIN E. SEWARD
Supt. of Road Instruction

J. LIVINGSTONE STRANGE
Instructor in Machine Shop and Repair Course

GILBERT M. THOMPSON
Road Instructor

BENJAMIN R. TILLSON
Instructor in Laboratory Course

FRANK G. WESTWOOD
Instructor in Garage Course

FRANK M. EDMONDS
Secretary

General Information

The Boston Young Men's Christian Association has, for years, operated one of the most extensive and thorough school systems in the country. The Institute is organized as a university, having the following wholly distinct schools: the College Preparatory School, with day and evening sessions; the School of Business, with day and evening sessions; the School of Commerce and Finance, of college grade, granting the Degrees of B. C. S. and M. C. S., with evening sessions; the Polytechnic School, offering many courses in Engineering and applied science, with day and evening sessions; the Electrical School, offering one, two and three years' courses in applied electricity, with day and evening sessions; the Evening Law School, with a four years' course, leading to the Degree of LL. B., with evening sessions; the School of Co-operative Engineering, with day sessions, enabling boys to earn while learning, offering four years' courses in Mechanical Engineering, Electrical Engineering, Civil Engineering and Chemical Engineering; the Automobile School, offering day sessions throughout the year and evening sessions from October to July and covering every phase of the automobile industry, with the exception of the manufacture of cars.

This great system of schools requires the services of over one hundred expert teachers, lecturers, and assistants and the expenditure of a large amount of money. The attendance is nearly three thousand men and boys annually. Prospective students will note that they are entering a long-established, recognized school where satisfactory results are assured, and their best interests conserved.

THE VALUE OF A SCHOOL

Much has been said and written as to the methods necessary to become a skilful chauffeur or repair man and how the essential qualifications may best be obtained. This controversy is not peculiar to the automobile industry, but to every trade, occupation, and profession. The time was when the law student obtained his legal education in the office of a lawyer. He attend-

ed to detail work, read what he could, absorbed as much as possible, and finally passed very simple examinations, if any were required, and entered practice. Such a course was found, however, to be decidedly unsatisfactory. If the student happened to be in an office where the practice was largely criminal, a knowledge of criminal law was gained, but little else. If in an office where real property or equity received the bulk of attention, these were his strong points. But, in any case, he was a one-sided man.

The same was true of the medical student who studied with a doctor; he was a narrow man. With the progress along educational lines, there came a demand for broadly trained lawyers and doctors, and, as a result, the accumulated knowledge and experience of the legal and medical professions were presented to students by men who gave their entire time to teaching and supervision. Consequently the young lawyer or doctor of today is an all-around man, thoroughly conversant with the theory and practice of his profession, and in possession of the experience of ages.

The shop-trained mechanic follows along the same lines. When he learns a certain trade or part of a trade, in a shop, he picks up what he can, but no one is responsible for his advancement or final attainments. If naturally bright and of a retentive memory, he will, in time, become skilled in certain operations, but he rarely rises above the bench and becomes a superintendent or mechanical engineer who is the product of the technical school. In the training of men for the automobile industry, the same plan holds good. A school is the place, provided the school is a good one, well equipped, well taught, and properly conducted.

THE CHAUFFEUR

The chauffeur occupies a position very similar to that of the locomotive engineer. His function is to drive with care, make adjustments, know when his machine needs important repairs, and see that they are made; in other words, to operate his car with efficiency and the greatest possible economy. Too many chauffeurs lose sight of this last requirement, and fail to keep down the expenses. It is only the man who has a thorough knowledge of his car, who knows the mechanism, its possibilities

and limitations, the function of every part, the possible derangements, their symptoms and how to repair them, who is really efficient.

The chauffeur sustains a peculiar relation to his employer. He is not a servant, on the one hand, nor a companion, on the other; he is supposed to be a skilful, well-trained, competent, gentlemanly, respectful employee, who not only knows his business, but his place, and where he fits into the transportation problem. All of these points, mechanical, social, and economic, are presented in the well-conducted automobile school, and as a result, the chauffeur knows his profession, and is alert to the responsibilities and requirements, and is prepared to meet them. He sustains the same relationship to the automobile industry that the marine engineering department of the United States navy does to our entire naval establishment. These engineers are graduates of the Naval Academy at Annapolis, and are cultured, refined gentlemen, yet they put on overalls and stand watch in a hot engine room below decks surrounded by engines of all descriptions, with complete knowledge of every nut, bolt, and shift of the entire vessel. These men do not apologize for their grimy hands, but, instead of being classed as ordinary mechanics, have raised the whole standard of marine engineering to the gentleman's level, and have shown that the skilled operator of expensive and delicate machinery is quite on a par with his cleaner, though no more honorable, fellow officer of the quarter-deck. The chauffeur should thus regard his profession, and seek to be an indispensable adjunct to every refined American home which can afford the luxury of a motor car; or, if in commercial lines, he should strive to make himself a thorough master of the requirements and economic conditions of the industry, and be an important factor in it. This high conception of the automobile industry and the function of the chauffeur and repair man make attendance at a well-conducted automobile school indispensable, and it is these features which are prominent in the work of the Automobile School of the Boston Young Men's Christian Association, one of the very few automobile schools in which a man can get full value for his money.

THE AIM OF OUR SCHOOL

1. To meet the needs of the prospective purchaser, that he may buy intelligently.

2. To enable the owner to understand the mechanical principles and requirements for care, so that he may save repair bills, enjoy his car, and get longer service from it.

3. To fit chauffeurs thoroughly for the responsibility of operating a car on the public highway: to equip them with a thorough knowledge of the mechanism; the requirements for its care; the troubles which are likely to occur; their symptoms, tests, and remedies: to make repairs and adjustments, and drive skilfully.

4. To provide a thorough and strictly up-to-date Machine Shop Repair course. This includes motor trucks and pleasure vehicles, that the student may secure and hold a position in any well regulated repair shop.

5. To teach the approved methods of operating and managing a Garage, including the bookkeeping and proper treatment of patrons.

6. To train men as demonstrators and salesmen and for the business in general. The courses are also of great value to the man whose business brings him in touch with the automobile trade as a dealer in sundries or as press representative.

LOCATION

The school is located at 288 St. Botolph Street, Fenway, Boston, where all the instruction is given. This is near the New Art Museum and opposite the St. Botolph St. entrance to the Conservatory of Music. Those desiring information in regard to our courses should apply at the office of the Association Institute of the Boston Young Men's Christian Association.

THE SCHOOL AND ITS WORK

Our automobile school, the first in America, was established in 1901. It sprang at once into popular favor and has continued to grow in worth and patronage from year to year. So great has been its expansion that we have been forced to move four

times, having outgrown our quarters, until last year we erected *the finest automobile school building in existence* and equipped it with machinery, cars, parts and tools, in such a manner as to cover every branch of the industry except the manufacture of new cars.

THE BUILDING

The building is a fireproof brick and concrete structure, over 140 feet in length, 60 feet in width, with two stories and a high basement. The first floor contains a fully equipped garage with every modern appliance including gasolene wagon, electric polishing machines, pneumatic cleaners, most approved washing appliance and drop lights. On this floor are also located the garage office, ladies' waiting room, gentlemen's waiting room, and show window for the display of the latest models of cars.

In communication with the garage is a fully equipped machine and repair shop with benches, lathes, power drill presses, milling machine, grinders, shaping machines, dies, over-head track, forge, tool-room and every appointment of a modern shop.

On the second floor are located the automobile school for chauffeurs and operators with a large finely ventilated lecture room provided with every form of illustrative material; the school office; telephone exchange; reading room and study; coat room; printing office; office of the shop superintendent; tool room; private instruction room; a separate room for teaching the washing of cars; dressing room and a large shop or laboratory with storage facilities for a great number of cars and equipment.

The lower floor of the building is devoted to the use of the Electrical and Woodworking Schools. The former has a large laboratory fully equipped with commercial appliances of all kinds; two good sized lecture halls; office of the Dean; private instruction room; testing room; tool room; instrument room and coat room. Adjoining the Electrical School is a large shop in which is to be installed various wood-working machines, including lathes, circular and band saws, steam box, etc., for the teaching of furniture manufacture, boats and other industrial products.

The building is heated by steam; lighted by electricity; has an elevator connecting all floors and a great abundance of daylight; is on a quiet street, and in fact, possesses every facility which modern science or experience could suggest.

THE FACULTY

The Faculty of the Association Automobile School has been selected with great care regarding technical skill, high moral character, interest in the work and ability to teach.

The students are taught by men of technical training, practical shop experience and refinement. These men give their full time to the school, and are interested in the personal development and success of every student.

They regard the work of a chauffeur and repair man as a profession, and have sought to accumulate all the knowledge and experience obtainable from the most reliable sources, and present this information in an attractive and useful form. It is safe to state that no young man with any mechanical ability, who also possesses character and tact, can fail, upon taking our Automobile course, to become a very useful man to any one requiring a competent chauffeur and repair man.

THE EQUIPMENT

The school is provided with a large and valuable equipment purchased at the cost of thousands of dollars. Besides tools, miscellaneous parts and general equipment, we provide 1, 2, 4, and 6-cylinder chassis and cars for shop use, and maintain several cars on the road.



DAY CLASS IN LECTURE ROOM

Courses

The automobile fraternity, owners and employers, are wellaware of the great responsibility which rests upon a chauffeur or operator. Not only is he responsible for the care of an expensive mechanism, but human life is directly under his charge. The owners and occupants of every automobile, and likewise the public, demand their proper share of protection. In view of this fact, the following courses have been adopted and thoroughly worked out, the success with which we have met demonstrating the value.

LECTURE COURSE

This course is designed to assist those who wish a thorough knowledge of the construction and care of the automobile and is composed of demonstration lectures in which are presented the operative principles, different types of cars, requirements for care, and the difficulties which are likely to occur in connection with each part, together with their symptoms, tests and remedies.

The following syllabus indicates the principal subjects of the lectures: Analysis of the gasoline vehicle; names of parts and their purpose; theory of explosion; operative principles of the internal combustion engine.

Various designs of engines and their requirements for care; methods of timing and setting valves; weak compression, causes and remedies.

Carburetors; various types; difficulties and remedies.

Cooling systems and requirements for care; governor and throttle action.

Study of ignition systems; various methods and parts of equipment; derangements; symptoms and remedies.

Operative principle of Low and High Tension Magnetos, together with illustrations regarding the care, difficulties, symptoms and remedies of same.

Requirements for care and adjustment of clutches, and various types of transmission or change-speed gears.

Study of differential gear; centre-shaft drive; axles and bearings; double-chain drive and care of the same.



STUDENTS IN THE LABORATORY COURSE AT WORK

Road derangements and remedies; care and repair of tires; care of lamps and accessories.

Construction of steering gear and brakes, and action of controlling levers on the road.

Systematic inspection of car and duties of a chauffeur.

Touring necessities; tool equipment; lighting systems and care of the same; rules for preparing a car for a trip and starting engine.

The lecture course is one of the most valuable features of the entire School and is characterized by scientific, practical instruction relating to every phase of the automobile industry, care and up-keep, possible derangements, their symptoms, and cure. No owner, intending purchaser, or operator of an automobile can fail to secure the greatest benefit from these lectures.

Schedule

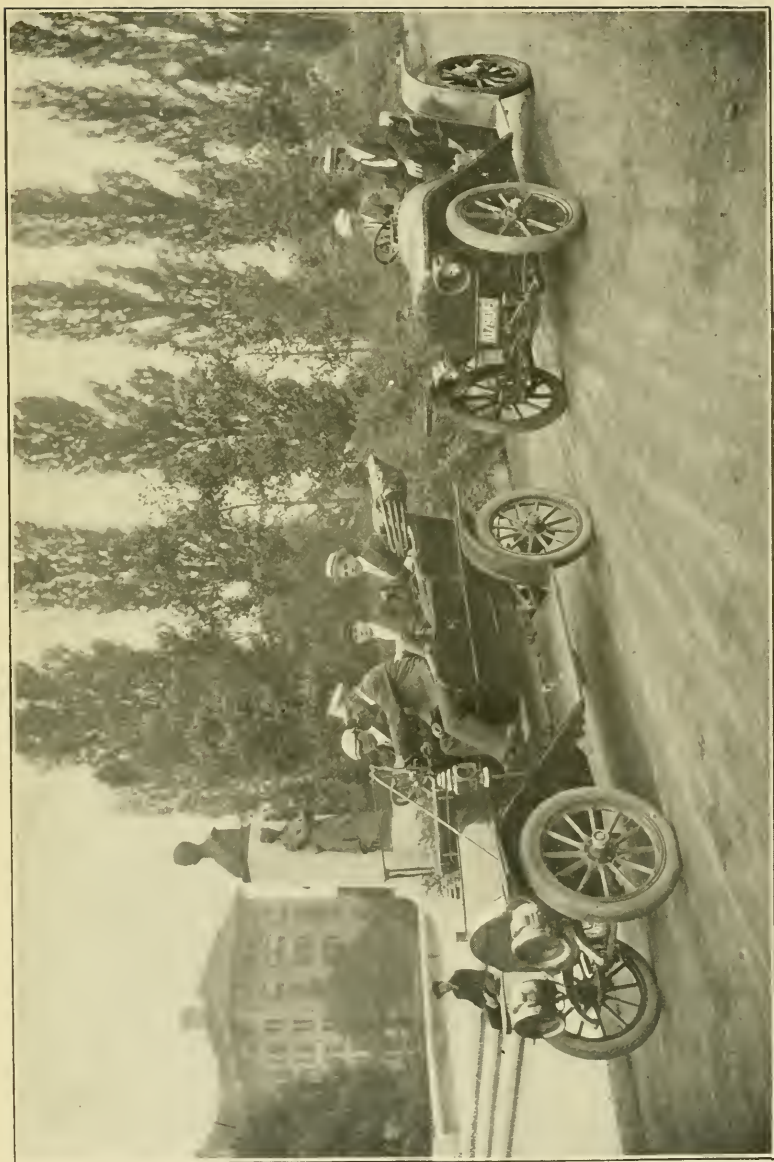
Day Course. Lectures are given every other day at 1.30 p. m., continuing for six weeks, courses being repeated throughout the year.

Evening Course. Lectures on Monday and Thursday at 7.30 P.M., continuing for nine weeks, and repeated throughout the year, except during July, August and September.

For tuition rates see page 25.

LABORATORY COURSE

In this course, students receive in actual shop practice the work as outlined in the Lecture Course, and each student is required to perform the duties devolving upon operators in the care, control and management of cars; to take down and reassemble and adjust engines and cars, getting practical experience in grinding valves, testing for weak compression and applying the remedies, removing carbonization, adjusting connecting rods, timing engines, dissecting carburetors and locating difficulties and adjusting properly; testing for ignition difficulties, circuiting the lines to locate trouble, adjusting vibrators, locating skipping cylinders, cleaning spark-plugs, testing and caring of batteries, dissecting high and low tension magneto, timing magneto, adjusting and cleaning



STUDENTS TAKING ROAD LESSONS

circuit breaker, locating and remedying magneto difficulties; adjustment and care of steering gear, springs, wheels and brakes; testing and adjusting for proper supply of oil to cylinders; care of tires, removing, vulcanizing and replacing the same.

We wish to emphasize the fact that each student is required to actually perform, in person, the above shop exercises and tests, and many more.

Each student should provide himself with jumper, overalls, 6-inch screw-driver, 8-inch monkey wrench and a pair of 5-inch pliers. The other tools are furnished by the school.

The Laboratory course is of extreme practical value, owing to the fact that the work covered in the lecture course is actually done by each student, inspected and passed upon by the instructor. This work is indispensable to one who wishes to know **HOW**, as well as **WHY**.

This course is open only to those who are taking the lecture course, or who pass an entrance examination.

Schedule

Day Course. Laboratory exercises are given every other day from 9 A.M. to 5 P.M., alternating with the lectures. This course is six weeks in length and is conducted throughout the year.

Evening Course. Laboratory work Tuesday, Wednesday and Friday 7 to 9.30 P.M. This course is nine weeks in length and is conducted throughout the year except during July, August and September.

For tuition rates see page 25.

ROAD COURSE

This course is to accommodate those who wish to learn to drive and secure an Operator's or Professional Chauffeur's License and is characterized by actual experience in driving up-to-date touring cars and roadsters over all conditions of roads and under expert instructors. This course illustrates the approved methods of managing the controlling levers, throttle, spark, clutches, brake, gear-shifter, accelerators and involves thorough experience in turning in narrow streets, hill climbing and reversing.

The Road Department is also equipped to provide road instruction in commercial truck driving when desired.

Students seeking a Professional Chauffeur's License in Massachusetts are required to pass a rigid examination, requiring the applicant to give a demonstration under the inspection of the State Board of Examiners.

The use of the car for the demonstration at the Highway Commission is included in the regular Road Course without additional charge. Should the student fail to pass the State examination on the first trial, he is given additional road instruction and the use of the car for a second examination without additional charge.

The Road instruction in our school, therefore, is very thorough and is in charge of exceptionally careful and competent instructors.

It may be added also that the Road Course affords a particularly enjoyable experience from the fact that some of the lessons are given over the beautiful parkways and country roads near the city. These roads are the finest in America.

Schedule

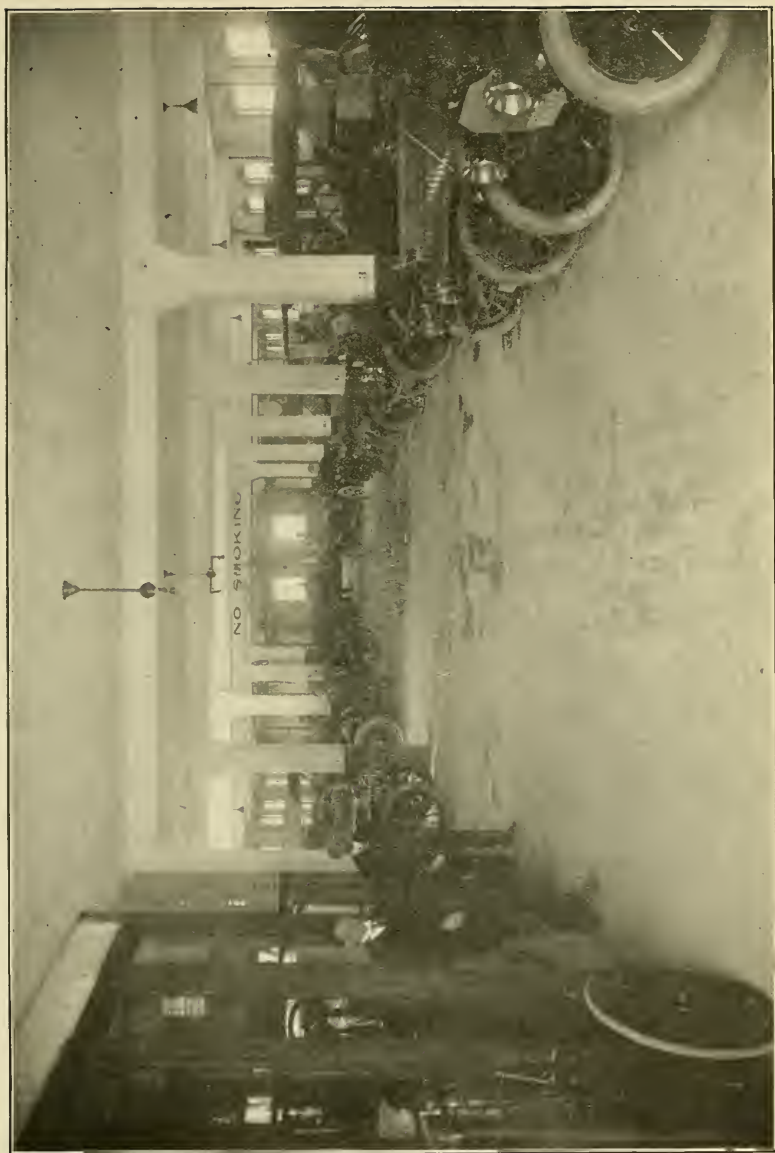
When the Road Course alone is taken, the time required is two weeks. In case the Lecture and Laboratory courses are also taken, the Road Lessons are given during the forenoon of the Lecture days, thus not delaying the progress of the student. This arrangement permits the student to complete the Day courses of Lecture, Laboratory and Road in six weeks, and the corresponding Evening courses in nine weeks.

For tuition rates see page 25.

CHAUFFEURS' AND OPERATORS' UNLIMITED COURSE

This course is a combination of the three previously described courses, viz: Road, Lecture and Laboratory, these three comprising the regular, well known and popular *Boston Y. M. C. A. Automobile Course* and all are necessary to one who wishes to become a proficient chauffeur or operator.

When taking the *Unlimited Chauffeurs' and Operators' Course* the Road Lessons are given during the latter part or at completion, of Lecture and Laboratory Courses, the time of taking them being optional with the student.



INTERIOR OF GARAGE

To all passing examinations in this course, a Special Unlimited Chauffeurs' and Operators' Diploma will be granted.

Schedule

Day Class, six days per week for six weeks. Evening Class, five evenings per week for nine weeks.

For tuition rates see page 25.

GARAGE COURSE

This course is to teach the operation and management of an automobile garage, and is indispensable to one contemplating the management of a garage. The improved methods and systems adopted and approved by the leading garages are emphasized and illustrated in our thoroughly equipped garage.

The student is also trained in the service of garage work, polishing by electricity, vacuum cleaning, garage book-keeping and the proper treatment of patrons, etc.

As the touring tendency increases, garages will be in operation in all parts of the country requiring skilful management. Training and experience are necessary to insure success. This we offer under ideal conditions.

Schedule

Day Course. Six days per week for three weeks, the course being repeated throughout the year.

Evening Course. Five evenings per week for six weeks, the course being repeated throughout the year except during July, August and September.

For tuition rates see page 25.

SPECIAL COURSE FOR BUSINESS MEN AND LADIES

This course of instruction is designed to assist owners, intending purchasers and ladies to a knowledge of the automobile.

The many testimonials which we have received from business men and owners permit us to state that this course of instruction will not only save the owner large sums in repair bills but will add greatly to the pleasure of motoring,

by enabling him to locate and remedy motor difficulties and save vexatious delays by the wayside. The highest degree of pleasure in motoring comes only to the man who has a thorough knowledge of the operative principles and care of his car. The owner is made to feel that the engine of his automobile, instead of seeming to be a sputtering monster, whose mildest voice is a threat of danger, may become a valued friend, who will seldom disappoint anyone who intelligently gives it proper care.

To the intending purchaser also, this course is extremely valuable from the fact that with the knowledge gained, he is empowered to select with wisdom.

Schedule

Day Class. The Lectures are given every other day at 1.30 P.M., and the Laboratory exercises on the days following, thus alternating with, and conforming to the Lectures.

Evening Class. Lectures, Monday and Thursday at 7.30 P.M. Laboratory Course, Tuesday and Friday, 7 to 9 P.M.

For tuition rates see page 25.

PRIVATE LESSON COURSE

The Private Lesson Course is designed to assist the busy man to a knowledge of his car.

The lessons are individual and scheduled entirely by appointment and to suit the convenience of the student.

The appointments may be secured by applying at the school office or by phone.

If the student be an owner the lessons may be applied directly to his car, no storage being charged while a student.

Schedule and Tuition

The Private Lesson tickets are Two Dollars each and may be purchased at the school office at the time the lessons are given or in advance.

The above rates are in addition to a membership in the Boston Young Men's Christian Association.

AUTOMOBILE MACHINE SHOP REPAIR COURSE

This course is intended to teach the vocation or trade of automobile repairing and provides thorough instruction and experience in actual repair work. This course is designed to enable the student to occupy and hold a position as repair man in any automobile shop. This course includes the overhauling and repairing of automobiles brought to the school. The car is dissected, the parts carefully measured, and wherever wear is shown, replacements and readjustments are made, the car reassembled, and put in running order. Mud guards are changed, steering posts altered, magnetos and carburetors repaired, batteries charged, ignition systems rewired, delivery cars and runabouts made from touring cars, and the entire appearance and efficiency of the car improved.

The work of this department includes teaching and experience in filing and fitting, cold chisel chipping, scraping bearings, tightening bolts and nuts, lock washers, removing broken bolts, etc.

Tap and die work, sawing stock with hack saws, soldering and brazing.

Centering and straightening stock, pipe fitting and bending, gear trimming.

Babbitting bearings.

Calipers and their use. Outside, inside and micrometer calipers.

Drill work. Hand, ratchet, pneumatic, electric and power drills.

Practical use of the lathe in the repair shop. Turning and fitting bearings, reaming, boring and grinding cylinders.

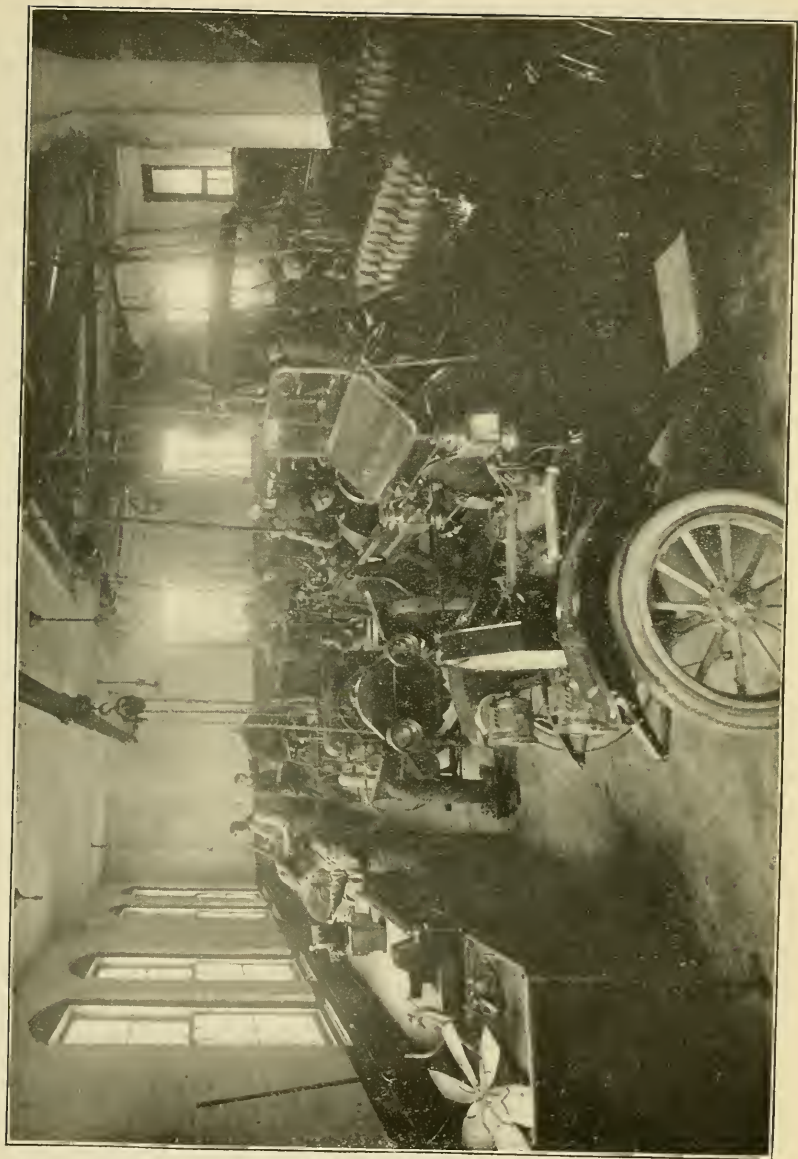
Use and care of shaping machines as related to automobile repairs, splining, key seating, etc.

Tool grinding, polishing and tempering.

Operation of milling machine as related to automobile repairs.

Starting engine, observing and reporting running qualities, inspecting car for repairs and laying out repairs.

This course teaches and successfully prepares young men to secure and hold positions in up-to-date repair shops, and is of inestimable value to those contemplating running an automobile repair shop, or to those who wish to earn a living in this industry.



STUDENTS AT WORK IN THE REPAIR SHOP

Admission to this course requires a general knowledge of the driving and the operative principles of the automobile. Application and question blanks will be forwarded by mail upon request. Students will be required to furnish overalls and jumper and the following tools: 5-in. pliers, 4-in. and 6-in. wrenches, a 6-in. screw driver, a 1-in. micrometer, a 3-in. outside caliper and a 3-in. inside caliper.

A diploma will be issued to all who successfully complete this course.

Schedule

Day Course. Repair work is done five days a week from 9 A.M. to 5 P.M., and on Saturday from 9 to 12 M. The course is nine weeks in length and is repeated throughout the year.

Evening Course. Repair work is done five evenings per week from 7 to 9.30 P.M., for 18 weeks. The evening course is offered throughout the year except during July, August and September.

For tuition rates see page 25.

CONDENSED SCHEDULE AND TUITION RATES

Special Note—All rates quoted below are in addition to a membership in the Boston Y. M. C. A. (\$2.00.) The tuition is regularly payable upon entering. In the Chauffeurs' and Operators' Unlimited Course the tuition for the Road Course need not be paid until the first road lesson is taken. Appointments for the road lessons should be made well in advance. The tuition for the Automobile Machine Shop Repair Course may be paid for as follows: \$32.00 (including membership) upon entering and \$25.00 at the completion of one-third of the course.

Courses	Cost	Length	Time	See Page
Chauffeurs' & Operators' Lecture Course	\$15.00	{ 6 weeks 9 weeks	Day } Eve. }	13
Chauffeurs' & Operators' Laboratory Course	15.00	{ 6 weeks 9 weeks	Day } Eve. }	15
Chauffeurs' & Operators' Road Course	25.00	{ 2 weeks 3 weeks	Day } Eve. }	17
Chauffeurs' & Operators' Unlimited Course Combining Lecture, Laboratory and Road Courses	55.00	{ 6 weeks 9 weeks	Day } Eve. }	18
AUTOMOBILE MACHINE SHOP REPAIR COURSE	55.00	{ 9 weeks 18 weeks	Day } Eve. }	22
Garage Course	15.00	{ 3 weeks 5 weeks	Day } Eve. }	20
SPECIAL COURSE FOR BUSINESS MEN AND LADIES				
a. Lecture Course	15.00	{ 6 weeks 9 weeks	Day } Eve. }	20
b. Laboratory Course	15.00	{ 6 weeks 9 weeks	Day } Eve. }	
PRIVATE LESSON COURSE				
a. Care of car	12.00	6 Lessons	Day }	21
b. Roadside Difficulties	12.00	6 Lessons	or }	
c. Operative Principles	12.00	6 Lessons	Eve. }	
d. Private road lessons	3.00	Each	Day }	

Additional Information

MEMBERSHIP

All students pursuing courses in the school must hold a membership in the Boston Young Men's Christian Association.

Privileges in the Association

Students are reminded of the fact that when they enroll as students in the school they become members of the Association and as such are entitled to many privileges and are surrounded by uplifting influences. Ask for our Year Book which enumerates the many privileges open to members.

Our membership ticket is transferable to any other Association and *vice versa*.

Suburban Association Members

All tickets held by members of the Cambridge, Chelsea, Everett, Malden, Melrose, Newton, Quincy and Somerville Associations will be honored for social privileges in the Boston Association. Holders of such tickets are allowed credit of \$2.00.

BUSINESS PHILOSOPHY

The first and most important step leading to success in any field of endeavor is efficient preparation. To be prepared is the secret of success in the Automobile World, as well as in other professions.

Our school can assist you to success.

THE PROOF OF IT

The proof of the efficiency of any school is shown by the success of its graduates. We will mail you, upon request, testimonials which we do not have room to place in our regular catalog. Our school has a national reputation, and has won recognition as the most progressive, modern and effective automobile school in America and we are pleased to refer prospective students to the leading dealers throughout the New England States. It is very gratifying to know that a very large number of our students have been referred to us by dealers and

others who are connected with the automobile industry. This indicates very strongly that the men who best know the exact requirements of one engaged in the automobile field believe thoroughly in our ability to meet those requirements.

A WORD AS TO PROSPECT

There is no occupation in which a small investment is capable of yielding so great a return. To the owner or prospective purchaser it means the saving of hundreds of dollars in repairs and up-keep. To the chauffeur it means a well-paying and responsible position at wages much in excess of those paid in most lines of work. To the repair man and garage keeper it means admission to a broad field of activity and a well-paid profession.

EMPLOYMENT

We are frequently asked if we guarantee positions to those completing our courses. In reply we would state that we make the same guarantee that any college or high-grade school does, namely, that of a thorough course.

No reputable school ever guarantees a job to gain a student. The school maintains an active and proficient employment department. Upwards of two thousand men, graduates of our school, are holding positions as chauffeurs, a large number of whom have secured their positions through our employment department.

VISIT TO OUR SCHOOL URGED

We urge all men contemplating taking an automobile school course to call at the Association, talk the matter over in detail and secure a visitor's pass to the school.

ADVISORY BOARD

Attention is called to the members of our Advisory Board whose names appear in the front part of the catalogue. They are some of Boston's most prominent automobile representatives.

BACKWARD STUDENTS

Should a student be deficient in the shop or lecture work at the close of his course, and be unable to pass the examination, he is privileged to remain a reasonable length of time and receive additional instruction without extra charge.

ADVANTAGES TO OUT-OF-TOWN STUDENTS

The Association is exceptionally well prepared to be of assistance to those who come from distant places and are obliged to board in the city while taking the course. We have a selected list of rooms and boarding places. Employment is sometimes secured through our Employment Department for those who wish to earn money while taking our courses.

For additional information, call on or write to Frank Palmer Speare, Educational Director, Young Men's Christian Association, Boston.

General Departments

DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B. P. E. Director

The Physical Department is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative, Hygienic, and Educational Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts. Basket ball, baseball and athletics.

DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced development and attain a spiritual foundation for successful life work the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups, and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter.)

DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following social features.

A Newly Equipped Game Room. The Popular Novel Club.
The Association Congress. The Land and Water Club.
Popular Social Evenings.

DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

The Employment Department, is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

BOYS' DEPARTMENT

DON S. GATES, A. B., City Secretary

The physical, social, employment, and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Membership dues for the boys range from one to six dollars according to the privileges desired. Boys' work is also organized in the North End, the South End and Roxbury.

Courses

COURSES IN THE DAY SCHOOLS

Alternating Current Machinery	German I
Advanced Structures	German II
Algebra I	German III
Algebra II	German IV
Arithmetic	Greek
Arithmetic, Commercial	History, American
Applied Mechanics	Hydraulic Engineering
Automobile Operator's Road Course	History, Ancient
Automobile Operator's Lecture Course	Heat, Engineering
Automobile Operator's Laboratory Course	Hydraulic Motors
Automobile Garage Course	Industrial Design
Automobile Machine Shop Course	Industrial Chemistry
Bookkeeping, Advanced	Latin I
Bookkeeping, Elementary	Latin II
Bridge Design	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Lettering
Drawing, Freehand	Machine Drawing
Drawing, Mechanical	Materials
Dynamics of Machines	Mathematics, Engineering
Elementary Science	Mechanism Design
Electricity I	Metallurgy of Iron
Electricity II	Penmanship
Electricity III	Physics
Electric Light and Transmisson of Power.	Public Speaking
English I	Power Plant Design
English II	Railroad Engineering
English III	Shorthand I
English IV	Shorthand II
English, Business	Spanish
Foundations	Spelling
French I	Stereotomy
French II	Surveying, Plane
French III	Surveying, Railroad
French IV	Trigonometry
Geometry, Plane	Typewriting
Geometry, Solid	Thermodynamics
Geometry, Analytical	Topographical Drawing
Geometry, Descriptive	Theory of Structures
	Testing Materials
	Technical Electrical Measurements
	Valve Gears

COURSES IN THE EVENING SCHOOLS

Accounting Problems, Advanced	Firing
Agency	French I
Algebra I	French II
Algebra II	French III
Architectural Drawing I	French IV
Architectural Drawing II	Geometry, Plane
Architectural Drawing III	Geometry, Solid
Architectural Drawing IV	Geometry, Analytical
Arithmetic	Geometry, Descriptive
Arithmetic, Commercial	German I
Auditing, Advanced	German II
Auditing, Elements of	German III
Automobile, Operator's Road Course	German IV
Automobile, Operator's Lecture Course	Greek
Automobile, Operator's Laboratory	History, American
Automobile Garage Course	History, Ancient
Automobile Machine Shop Repair Course	Illustrating & Cartooning
Bankruptcy	Industrial Design
Bills & Notes	Italian
Bookkeeping, Elementary	Latin I
Bookkeeping, Advanced	Latin II
Business Organization & Administration	Latin III
Calculus	Latin IV
Chemistry I	Law, Commercial
Chemistry II	Law, Special (in Law School)
Chemistry III	Lettering
Chemistry IV	Machine Drawing
Civil Service	Massachusetts Practice
Concrete I	Mathematics, Engineering
Concrete II	Mechanism
Constitutional Law	Partnership
Contracts	Penmanship
Corporations	Physical Geography
Cost Accounting, Elements of	Physics
Cost Accounting, Advanced	Physiology
Court Practice	Plan Reading & Estimating
Criminal Law	Pleading
Drawing, Freehand	Property I
Drawing, Mechanical	Property II
Economics, Applied	Property III
Economics, Principles of	Public Speaking
Elementary Science	Railroad Engineering
Electricity I	Sales
Electricity II	Shorthand I
Electricity III	Shorthand II
English I	Spanish
English II	Spelling
English III	Steam Engineering
English IV	Surveying, Plane
English, Business	Surveying, Railroad
Equity I	System Building, Advanced
Equity II	System Building, Elements of
Evidence	Torts
	Trigonometry
	Typewriting
	Window Dressing

Preparatory School Subjects scheduled both Winter and Summer Terms

CATALOGUE OF THE

EVENING LAW SCHOOL



1912-1913

Boston Young Men's Christian Association

2, 8 & 10 ASHBURTON PLACE, BOSTON, MASS.

(After October, 1912, Huntington Avenue)

CATALOGUE OF THE

EVENING LAW SCHOOL

FIFTEENTH YEAR

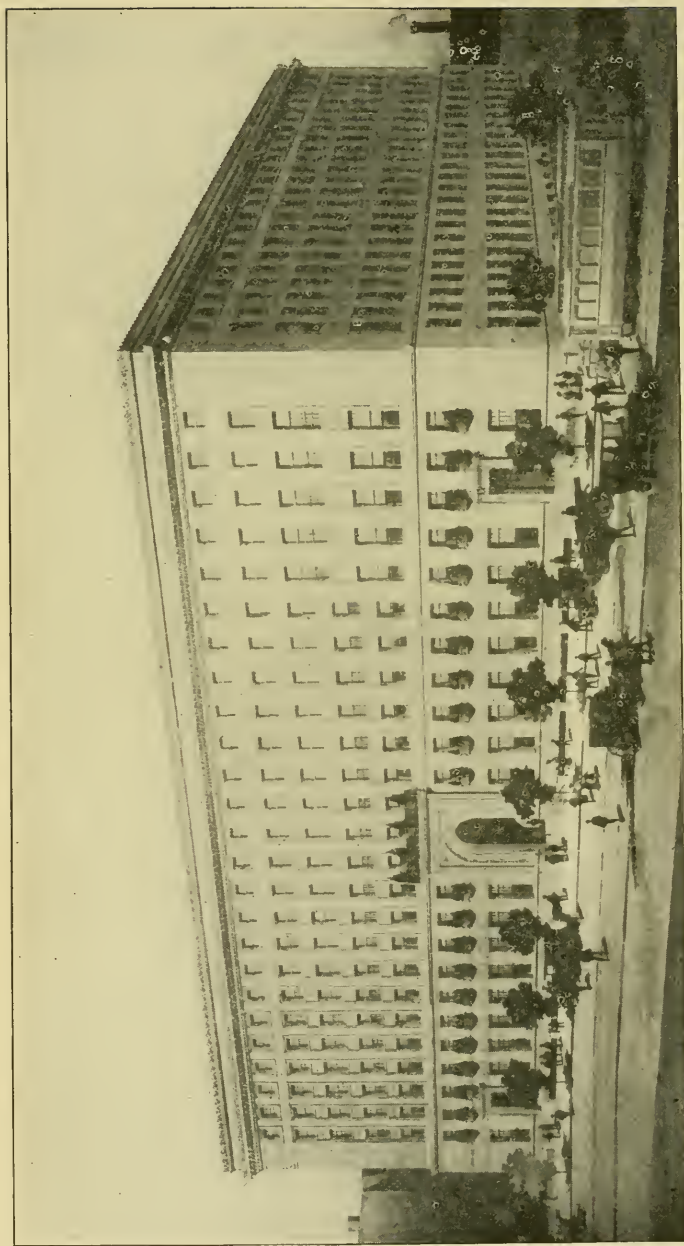
1912-1913



BOSTON, MASSACHUSETTS

Published by the Young Men's Christian Association

1912



OUR NEW HOME

The above cut represents the new Association Building now under process of construction on Huntington Ave. It will contain among other features, school accommodations of the very best, a fine gymnasium, bowling alleys, swimming pool, cafe, dormitories, shops and laboratories, camera club rooms, social and recreative rooms and auditorium.

The educational portion of the building should be ready for occupancy about October 1, 1912.

Association Institute

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

Organized on the University Plan

Day, Evening and Summer Schools from the 7th Grade Grammar up to and including work qualifying for a College Degree.

College Preparatory School

A high-grade College Preparatory School consisting of a Grammar School (7th and 8th grades) and a High School fitting for the Colleges, Medical and Dental schools, Massachusetts Institute of Technology, Annapolis, West Point, Lowell School for Industrial Foremen, and the Law schools.

Day and Evening Sessions

School of Business

Offers all of the courses of the regular Business School program, and additional cultural courses preparing for business and admission to our School of Commerce and Finance.

Day and Evening Sessions

Co-operative Engi- neering School

Four years' courses of college grade in Chemistry, Mechanical and Civil Engineering etc., in co-operation with business firms. Students earn while learning.

Day Sessions

School of Commerce and Finance

An incorporated institution of college grade with degree granting privileges. Offers evening courses only, which are designated as follows: Banking, Business Administration, Finance and Bond Salesmanship, Normal Course, and Professional Accountancy. Faculty of 43 prominent business specialists and College Instructors.

Evening Sessions

Evening Law School

Established in 1898; incorporated in 1904. Provides a four years' course in preparation for the Bar and grants the Degree of Bachelor of Laws.

Evening Sessions Only

Polytechnic School

A School of many departments, training students in Applied Science. Much of this work is of technical school grade.

Day and Evening Sessions

School of Electricity

Offers one and three years' evening courses and a four years' day course in Applied Electricity and Engineering. Well equipped shops and laboratories.

Day and Evening Sessions

Automobile School

Deals with the construction, care, and operation of all types of gasoline vehicles; a large staff of teachers; ample equipment and garage. New Building and Machine Shop.

Day and Evening Sessions

For further information concerning any of the above schools or departments, address the Educational Director,

FRANK PALMER SPEARE, 10 Ashburton Place, Boston, Mass.
after October, 1912, Huntington Avenue, Boston.

Calendar

1912

Sept. 3-9.	Condition Examinations
Sept. 16 (Monday).	Senior Lectures begin
Sept. 18-21.	Registration
Sept. 23 (Monday).	Lectures Begin
Dec. 21-28.	Christmas Recess

1913

May 30 (Friday).	Memorial Day, Holiday
June 15 (Sunday).	Baccalaureate Address
June 18 (Wednesday).	Commencement Exercises

CONDITION EXAMINATIONS, 1912

Tuesday, Sept. 3.	Criminal Law, Property I, Corporations
Wednesday, Sept. 4.	Torts, Equity I, Property II (Deeds)
Thursday, Sept. 5.	Agency, Common Law Pleading, Evidence
Friday, Sept. 6.	Contracts, Bills and Notes, Equity II
Monday, Sept. 9.	Sales, Property II (Wills), Property III

Examinations must be taken at the time scheduled, as no special examinations will be given.

Officers of Administration

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION



General Administrative Officers

ARTHUR S. JOHNSON, *President*

JACOB P. BATES, *Vice-President*

HAROLD PEABODY, *Recording Secretary*

FRANCIS B. SEARS, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*



Educational Committee

JOHN E. ROUSMANIERE, *Chairman*

WILLIAM E. MURDOCK

ALBERT H. CURTIS

MORGAN L. COOLEY

GEORGE P. HITCHCOCK



Educational Administrative Officers

FRANK P. SPEARE, *Educational Director*

GALEN D. LIGHT, *Asst. Educ. Director and Bursar*

H. W. GEROMANOS, *Supt. of Evening School System*

IRA A. FLINNER, *Supt. of Day School System*

CHARLES B. GRAY, *Secretary*



Members of the Law School Corporation

SAMUEL CROCKER BENNETT, *President*

EZRA RIPLEY THAYER, *Vice-President*

GEORGE WHITTEMORE MEHAFFEY, *Secretary*

DANIEL CHAUNCEY BREWER

FRANCIS BACON SEARS

ARTHUR STODDARD JOHNSON

Faculty

FRANK PALMER SPEARE, M.H., DEAN

ARTHUR ATWOOD BALLANTINE, A.B., LL.B.,
Criminal Law

CHARLES NEAL BARNEY, A.M., LL.B.,
Equity I

HERMAN LARUE BROWN, A.B., LL.B.,
Agency

WILLIAM EDWIN DORMAN, A.B., LL.B.,
Constitutional Law

GUY H. HOLLIDAY, A.B., LL.B.,
Common Law Pleading

ALBERT SAVAGE HUTCHINSON, A.B., LL.B.,
Equity II

HENRY TILTON LUMMUS, LL.B.,
Court Practice

HUGH DEAN McLELLAN, A.B., LL.B.,
Contracts and Property I

GUY NEWHALL, A.B., LL.B.,
Property III

CLARENCE LUCIAN NEWTON, PH.B., J.M.,
Corporations and Property II

RAYMOND TASKER PARKE, A.M., LL.B.,
Bills and Notes, and Sales

EDWARD HENRY RUBY, A.B.,
Mass. Practice and Bankruptcy

OSCAR STORER, A.B., LL.B.,
Torts and Evidence

SYDNEY RUSSELL WRIGHTINGTON, A.B., LL.B.,
Partnership

COUNSELLORS

ASA SAMUEL ALLEN, LL.B.
CORRIL ELLSWORTH BRIDGES, LL.M.

GALEN DAVID LIGHT, A.B.,
Secretary

KATHERINE M. VINTON,
Recorder

Historical Review

The Evening Law School of the Boston Young Men's Christian Association was established in 1898 in response to a demand for an Evening Law School, which should be so thorough in its work and conducted on such a high plane that its graduates will stand well at the Bar and be recognized as men of professional attainment and ethical standards.

Every effort has been put forth to establish and maintain high standards of entrance and graduation. A four years' course was announced at the outset in order that those desiring a short cut to the Bar might be deterred from entering. Students have been able after two years of study to pass the Bar examinations, but no official reference has ever been made to this fact, and the men have been prohibited from attempting any such intensified and necessarily superficial procedure.

The student body consists of men of ability who devote themselves to their work with marked fidelity, and upon graduation pass the Bar examinations successfully and enter practice.

When the school was established the co-operation was secured of the Hon. James R. Dunbar, the late Prof. James Barr Ames, Dean of the Harvard Law School and Mr. Samuel C. Bennett, then Dean of the Boston University Law School. Under the direction of this board of advisors the School was organized.

Successful career. Being thus auspiciously inaugurated, the first evening law school of Massachusetts entered upon what proved to be a most successful career. Nineteen hundred and eighty students have been enrolled, including clerks from the offices of leading attorneys; clerks and officers from every court in Boston; state, city and government officials; teachers; and students from other law schools, in addition to a large number of able men engaged in different lines of business.

Incorporation. In January, 1904, a bill was introduced into the Massachusetts Legislature seeking the incorporation of the School with the power to grant the degree of Bachelor of

Laws. The passage of this bill by the Legislature and the cordial recognition and endorsement of the school by the Bench, Bar and heads of our great professional schools, testify in no uncertain tones to the position the school occupies in the educational activities of the Commonwealth.

High Standards. The work of the past has been characterized by strict and impartial administration, expert instruction, and devotion on the part of the students. The success of the graduates in passing the Bar examinations, and later in practice, has amply justified what may at times have seemed to be undue severity.

If passing the Bar examination were the only end to be attained, the work would be less difficult, but reputable institutions concern themselves much more with the future prospects of their students than with the fitting of any number of men for certain tests; and to this end the courses as herein announced were arranged to duplicate as nearly as possible those of the best university law schools.

The study of law requires diligent application and regular attendance upon the lectures and other exercises of the school; also a large amount of reading and thought in order to comprehend clearly and to assimilate properly the many difficult problems presented. A successful lawyer must have not only a thorough knowledge of the law, but the power to apply that knowledge in each particular case, no matter how complicated the conditions may be; and it is this latter phase of the profession's requirements that makes hasty preparation of no value to one who hopes to be successful in active practice; for though he may in this way gain admission to the Bar, he will be incompetent to give counsel worthy the name.

Method of Instruction. There are three methods of instruction employed by law schools: the lecture method, in which the instructor gives a presentation exercise and assigns cases to be read in relation thereto; the case method in which cases are assigned to be read in advance which are then discussed in class and commented upon; and a combination of these two systems, in which the instructor gives a lecture or presentation of the essentials, followed by the discussion of cases previously read.

Fourteen years' experience has led the management of the Evening Law School to adopt a modification of the latter

method, namely: lecture, citation and discussion, followed by a quiz. In addition, special quizzes and recitations are held several times each week for the students of the first and second year classes by regular quiz masters, whose business is to review the work of preceding lectures, clear up the difficult points, and assist those who require aid. The value of this method is clearly demonstrated by the remarkable success of our students at the Bar examinations and later in practice.

New Building

Throughout its entire career the Association Evening Law School has suffered from a lack of accommodations. Outgrowing the rooms in the old Association building, the school was moved to the Massachusetts Institute of Technology, which, in turn, was outgrown, some of the classes being transferred to the Massachusetts College of Pharmacy. Later the entire school was moved into the Mechanic Arts High School, where it has been comfortably housed for the past three years, but remote from the main Association and library.

Early in the fall of 1912, we shall move into our new Association building on Huntington Avenue, near Massachusetts Avenue. This building, or group of buildings, will be one of the largest Association plants in the world, and will contain, among other features, ideal school accommodations.

LAW LIBRARY

The law library will be moved into the new building upon its completion and will occupy a large and attractive room. Frequent purchases of books are rapidly increasing the size of the library, and it now compares very favorably with that of other recognized schools.

CLASS ROOMS

Some thirty class rooms, laboratories, lecture halls, general library, law library, study rooms and room for the Alumni will be provided.

LIGHT AND VENTILATION

The light and ventilation in the new plant will be of the most approved types, and students will find every facility for their comfort.

PHYSICAL DEPARTMENT

The new plant will contain one of the most complete and efficient Association physical departments in America. Beside the main gymnasium, there will be a business men's section,

bowling alleys, swimming pool, hand ball courts, tennis courts, and private exercise rooms.

DORMITORIES

Nearly three hundred desirable dormitories are being provided, where men may live throughout the year. A cafe, spa, social and recreative rooms will add to the attractiveness. No law school could be more adequately provided for than will be the Association School, and no students could work under more inspiring and helpful surroundings.

BEFORE CLASS

Business men may go directly from their offices to the Association building, take some exercise, followed by a plunge in the pool; then, after a light lunch attend their lectures. It will be found that such a procedure keeps one thoroughly toned up and capable of doing his best work.

Alumni Association

Some years ago an Alumni Association was formed, but, owing to the lack of suitable accommodations, it was allowed to slumber. Early in the spring of 1912 the matter was again taken up and a permanent organization formed with the following purpose:

"The object of this Association shall be to advance the cause of legal education, to promote the interests and increase the usefulness of the Boston Y. M. C. A. Law School, to work for the welfare of the community at large, and to promote mutual acquaintances and fellowship among all members of the Association."—*Constitution, Article II.*

Several meetings were held, a constitution was adopted, and the following officers elected:

Officers

President, Hugh A. Carney, '11
Vice-Presidents, John Quinn, Jr., '06
Samuel E. Blanchard, '03
George W. Hopkins, '08
Charles H. Lutton, '02
Lyman W. Brooks, '10
Secretary, Nelson B. Todd, '08
Treasurer, Frederick A. Kennett, '11

Council

Term ending 1915
George P. Hitchcock, '10
Alfred M. Weismann, '11
Arthur L. Woodman, '06
Term ending 1914
George W. Reed, '03
F. Chester Everett, '09
Dana S. Sylvester, '09
Term ending 1913
John J. Attridge, '05
Herman A. MacDonald, '10
Joseph T. Brennan, '04
Term ending 1912
Harry A. English, '11
John Speirs, '03
John H. Devine, '07



Class - 1912
Boston's M. C. A. Evening Law School

SCHOOL OF COMMERCE AND FINANCE

Lawyers find that a large percentage of their practice deals with business in all its forms. The most successful lawyers, therefore, are those who have the greatest knowledge of business methods in their most modern applications. Students of the Law School, as well as the Alumni, will find in the School of Commerce and Finance of the Association a most helpful institution. Courses are offered in Accounting, Business Administration, Investments and Bond Salesmanship, and a Normal Course for those who wish to teach in the various colleges. A special circular of this school may be obtained upon application.

CLASS OF 1912

On June 19, 1912, the following men received the Degree of Bachelor of Laws:

*Asa Samuel Allen
Harry Lee Bagley
*James Thomas Baldwin
Charles Edward Baltzo
Henry Albert Bascom
William Henry Bazley
Samuel Tompkins Bennett
Robert Edward Bigney
*John Joseph Burke
Warren Frederick Card
Cyrus Stewart Ching
George Cohen
John Joseph Conway
*Lester Wilkins Cooch
*Ralph Bertrand Currier
Wilfred James Doyle
John William Eldracher
George Robert Ellis
Norman Farquhar
Philip Joseph Feinberg
Frank Hervey Fittz
Frank Freundlich
John Francis Gannon
Charles Emmett Gorman
Harry Klauser Good
Reuben Bertram Gryzmish
Charles Edward Halliday, Jr.
John Joseph Haney
Joseph Charles Hannon
Edward Lavant Harris
Walter Joseph Hendrick
*Frederick Hoitt
Gustav Ferdinand Hollstein
William Frank Joseph Howard
Myer Harry Isaacson

*Cum Laude

Walter Scott Jardine
Frank Roland Keith
Luke Joseph Kelley
Samuel Thomas Lakson
Timothy Francis Leonard
Finch Elbert Lewis
*Henry Nathaniel Longley
John Michael Lyons
Thomas Bernard McCaffrey
*William John MacInnis
Abner Sterling Mel aud
Arthur Hawes McLearn
John Cornelius Mahoney
William Raymond Mahoney
George Albert Mansfield, Jr.
*Leslie Rogers Moore
Alexander Nagle
Arthur Elmer Reimer
Ralph Henderson Robb
Francis James Rogers
Michael Seretto
Leon Leland Silbert
Nicholas John Skerrett
Walter McCabe Smith
*George Edwin Stebbins
Richard Rogers Sullivan
James Francis Terry
Ralph Carl Thulin
Frederick J. Turner
Nathan Ullian
Joseph Vecchioni
Charles Gordon Whitcomb
Harold Willis
Edward Joseph Ziegler

Requirements

FOR ADMISSION

All applicants for admission to the school must present satisfactory evidence of good character, and must be at least eighteen years of age for admission to the work of the first-year class at its formation.

Graduates of colleges, scientific and four-year courses in high schools of good standing are admitted without examination upon presentation of a certificate or diploma. Applicants who have had a partial course in a good high school will be credited with work done.

To those unable to enter the Law School by reason of insufficient preliminary training, we recommend courses in the Association Preparatory School, a fully equipped and highly organized high school with day and evening sessions during the summer and winter, which prepares students for Harvard College, the Massachusetts Institute of Technology and other colleges, as well as the Harvard and Boston University, and Association Law Schools. The time required is less than in other good high schools and the work thorough. Our high school certificates are accepted by the New England College Entrance Examination Board and are accordingly recognized by the Board of Bar Examiners.

Advanced Standing. Candidates for admission with advanced standing, will file their applications and credentials regarding previous study of law with the Dean.

Students from other law schools, applying as above, will be required to present a letter from the Deans of said schools regarding their standing and general work.

Special students will be admitted to the Law School under certain conditions at the discretion of the Dean.

SPECIAL NOTICE. Owing to the delay each year on the part of the students and the consequent rush on the opening night, those desiring admission are requested to register during the two weeks previous to the opening of the school.

For application blanks for admission to the school, or for further information, address the Secretary of the Law School, 10 Ashburton Place, Boston, until October 1, 1912.

FOR THE DEGREE

The requirements for the degree of Bachelor of Laws in point of age, period of attendance at the school, and the passing of examinations, are as follows:

At the time of receiving the degree one must have attained the age of twenty-one years.

The required period of attendance at the school is four years. One or two years' attendance at a three-year law school may be counted as a part of the four years, but all of the examinations of the four years must be passed.

The right to take examinations, as well as the privilege of continuing one's membership in the school at any time, is conditioned upon regular attendance at the exercises of the school. Attendance at 75 per cent of the lectures in each course is required. Those failing to attend said 75 per cent will lose 10 per cent from their rating in such subjects.

All examinations must be taken at the time scheduled, and no student is allowed to present himself for examination more than once in the same subject, provided he passes at the first trial. If, for good and sufficient reason, a student finds that he will be unable to take an examination at the time scheduled, he must previously obtain permission from the Dean to take said examination at the second trial.

No student who has more than one condition standing against him on the work of the first two years will be allowed to register as a regular third-year student, and no student having any condition will be admitted as a regular student to the fourth year. He may, however, although registered as a third-year student, take and be credited with a limited number of fourth-year subjects, the number varying according to the number of his conditions.

No student who fails on account of conditions to receive his degree in due course will be permitted, except by special vote of the faculty, to remove his conditions later than two years after the graduation of his regular class.

Every person who, while a member of the school, passes a satisfactory examination in one or more subjects will be entitled to a certificate, stating the length of time he has been a member of the school, and specifying the subjects in which he has passed

examinations, but no undergraduate will be given letters of endorsement to the Board of Bar Examiners.

ACADEMIC PREPARATION FOR BAR EXAMINATIONS

The following is a copy of the recent ruling of the Board of Bar Examiners of Massachusetts relative to the academic preparation of applicants:

A

GENERAL EDUCATION

(March 28, 1911)

After February 1, 1914, an applicant must show by certificate or certificates that he,—

(a) Is a graduate of a college, or has passed the entrance examinations of a college, or of the College Entrance Examination Board, or examinations substantially equivalent thereto: or has complied with the entrance requirements of a college or

(b) Is a graduate of a day high school, or of a school of equal grade: or

(c) Has passed the examinations given for admission to the state normal schools of Massachusetts in the following subjects:—

I. Language.—English, with its grammar and literature.

II. United States History.—The history and civil governments of Massachusetts and the United States, with related geography and so much of English history as is directly contributory to a knowledge of United States history.

III. (a) Latin or

(b) French

IV. (a) Algebra or

(b) Plane Geometry

V. Any two of the following:—

(a) Physiology and Hygiene

(b) Physics

(c) Chemistry

(d) Botany

(e) Physical Geography

[The above rule, VII, A, was established by the board of bar examiners March 18, 1911, and was approved by the Supreme Judicial Court March 28, 1911.]

B
LEGAL EDUCATION
(January 3, 1910)

Applicants must have knowledge of the general principles of the common law and of the more important provisions of our statutes.

Examinations in law shall consist of printed questions to be answered in writing, based upon the following subjects or some portion thereof:—

Contracts	Negotiable Instruments
Torts	Bailments
Real Property	Carriers
Criminal Law	Wills
Evidence	Probate Law
Equity	Domestic Relations
Corporations	Trusts
Partnership	Pleading
Mortgages	Practice
Suretyship	Constitutional Law
Agency	Bankruptcy
Sales	Legal Ethics

[The above rule, VII, B, was established by the board of bar examiners November 27, 1909, and was approved by the Supreme Judicial Court January 3, 1910.]

**PREPARATORY COURSES FOR CANDIDATES FOR THE
BAR EXAMINATIONS**

For Men who have not had a High School Course

Those who desire to take the Massachusetts Bar examinations but who are not graduates of high schools, may meet the requirements as recently made by the Board of Bar Examiners, by taking the courses in our Preparatory School during the summer or winter sessions day or evening.

For Men who have had a Partial High School Course

Applicants who have had a partial course in a high school will be given credit for those subjects passed successfully, and for which certificates are presented. If they are unable to furnish certificates of the work done, they will be examined by the Dean of the Preparatory School, and thereby receive credit

for the courses passed successfully. The Dean will then prescribe such courses as are necessary to complete the regular work to receive a diploma from our Preparatory School.

THREE OPTIONS

Men entering the Evening Law School of the Boston Young Men's Christian Association, who find it necessary under this new ruling to take preparatory school work are given three options:

1. The Preparatory School may be attended before entering the Evening Law School.

2. The Preparatory School may be attended during the winter months while attending the Law School. This plan necessitates doing partial work in the Law School and as much preparatory work in addition as a student can carry.

3. A student, while a member of the Law School, may attend the summer sessions of the Evening Preparatory School for as many terms as may be necessary, and thus meet the requirements.

Program of Instruction

FIRST YEAR

Torts

MR. STORER Monday, throughout the year, 7.30-9.00

Criminal Law

MR. BALLANTINE Wednesday, first half-year, 7.30-9.00

Agency

MR. BROWN Wednesday, second half-year, 7.30-9.00

Contracts

MR. McLELLAN Friday, throughout the year, 7.30-9.00

SECOND YEAR

Property I

MR. McLELLAN Monday, throughout the year, 7.30-9.00

Bills and Notes

MR. PARKE Wednesday, first half-year, 7.30-9.00

Sales

MR. PARKE Wednesday, second half-year, 7.30-9.00

Equity I

MR. BARNEY Friday, throughout the year, 7.30-9.00

THIRD YEAR

Equity II

MR. HUTCHINSON Monday, throughout the year, 7.30-9.00

Corporations

MR. NEWTON Wednesday, throughout the year, 7.00-8.15

Pleading

MR. HOLLIDAY Friday, first half-year, 8.15-9.30

Special Course

MR. NEWHALL AND MR. DORMAN
Friday, second half-year, 8.15-9.30

Property II

MR. NEWTON Friday, throughout the year, 7.30-9.00

FOURTH YEAR

	<i>Bankruptcy</i>
MR. RUBY	Monday, first half-year, 7.00-8.15
	<i>Mass. Practice</i>
MR. RUBY	Monday, second half-year, 7.00-8.15
	<i>Partnership</i>
MR. WRIGHTINGTON	Monday, first half-year, 8.15-9.30
	<i>Court Practice</i>
MR. LUMMUS	Monday, second half-year, 8.15-9.30
	<i>Evidence</i>
MR. STORER	Wednesday, throughout the year, 7.30-9.00
	<i>Constitutional Law</i>
MR. DORMAN	Friday, first half-year, 7.30-9.00
	<i>Property III</i>
MR. NEWHALL	Friday, second half-year, 7.30-9.00 .

SPECIAL COURSES

Several special and supplementary courses are offered each year, an announcement of which is made during the term.

Outline of Courses

FIRST YEAR

Agency

Nature of the relation, its creation and termination; duties, rights and liabilities of principal and agent *inter se* and as regards third persons; the doctrine of undisclosed principal; and of ratification.

Wambaugh's Cases on Agency.

Contracts

Offer and acceptance; consideration; performance of, or promise to perform non-contract obligation as consideration; moral obligation as consideration; antecedent act or agreement as consideration; parties to a contract, including aliens, executors and administrators, guardians, infants, insane persons, intoxicated persons and married women; omitting agents, corporations and partners on account of these subjects being given in other courses; contracts under seal, including the form requisites thereof, delivery and the matter of consideration for contracts under seal; rights of beneficiaries under a contract; rights of assignees of a contract; conditional and unconditional contracts; rescission of contracts; damages for breach of contract.

Keener's Cases on Contracts.

Criminal Law

Sources of criminal law; nature of crime; common law and statutory offences; criminal acts; intent in general, and as affected by circumstances, such as insanity, intoxication, infancy, coercion, ignorance or mistake; justification; necessity; agency; consent; condonation; contributory acts; domestic relations; parties in crime; jurisdiction.

Crimes against the person; against property; against public policy; health; peace; justice; decency and morality.

Criminal procedure; arrest; extradition; examination and bail; indictment and criminal pleading; trial; evidence; proceedings after verdict; error.

Beale's Cases on Criminal Law.

Beale's Criminal Procedure.

Torts

General principles; assault and battery; false imprisonment; trespass; conversion; slander and libel; enticement and seduction; deceit; slander of title; malicious prosecution; negligence, and incidental points.

Bigelow on Torts.

Ames' and Smith's Cases on Torts.

Chase's Cases on Torts.

Simpson's Cases on the Law of Torts.

SECOND YEAR

Bills and Notes

The provisions of Revised Laws of Massachusetts, Chapter 73 (Negotiable Instruments Law). Formal requisites of negotiable and non-negotiable bills of exchange, checks and notes; obligations and rights of the various parties to such instruments, makers, acceptors, drawers, drawees, payees, indorsers and endorsees; suits upon bills and notes; pleading and defences; accommodation paper; guaranty and generally of the transfer, indorsement and extinguishment of bills and notes.

Revised Laws of Massachusetts, Chapter 73.

Huffcut on Negotiable Instruments.

Norton on Bills and Notes, Third Edition.

Equity I

Nature and limits of jurisdiction; the jury in equity; equitable parties; the maxims; conversion; accident, mistake and fraud; accounting, subrogation and other pecuniary remedies; specific performance of affirmative and negative contracts, including part performance, partial performance with compensation, defenses; specific reparation and prevention of torts by injunction, including particularly jurisdiction in waste, trespass, nuisance and in industrial disputes.

Ames' Cases on Equity Jurisdiction, Vol. I, Parts 1-6.

Property I

Distinction between real and personal property; nature and acquisition of rights and personal property; acquisition of

rights not under former owner; transfer of rights in personal property; possession of personal property; tenure in general; division of estates; seizin and conveyance uses and trusts; mines; wild animals; border trees; emblement; fixtures; waste; rights in another's land; natural rights; easements; covenants running with the land; public rights; franchises; rents.

Gray's Cases on Property, Vol. I and II (Second Edition).

Sales

The provisions of the Sales Act, Acts of 1908, Massachusetts, Chapter 237, codifying the Massachusetts law of sales of personal property. Sales and mortgages of personal property; subject matter of sales; when title passes; risk of loss; rights and remedies of seller and buyer in executed, executory and conditional contracts of sale; warranties of title and quality; seller's lien and stoppage *in transitu*; bills of lading and other documents of title; fraud; statute of frauds; factors and recording acts; actions and defences.

Massachusetts, Acts of 1908, Chapter 237.

Benjamin on Sales, 7th American Edition.

Tiffany on Sales, Second Edition.

Williston on Sales, 1909 Edition.

THIRD YEAR

Corporations

Nature of a corporation; difference between corporation and partnership; distinction between stockholders and corporation; promotion of corporations; formation of corporations; corporations *de jure*; corporation *de facto*; dissolution of corporations; interpretation of charters; powers of a corporation; doctrine of *ultra vires*; liability for torts and crimes; corporation and the State; shares of stock, dividends; rights of stockholders; stockholders' liabilities; foreign corporations; voting rights of stockholders; voting trusts; rights and liabilities of directors and officers; rights and remedies of creditors against property of corporations.

Smith's Cases on Private Corporations.

Equity II

(a) The principal part of this course covers the subject

of private trusts as treated in Ames' Cases on Trusts and deals with the following topics: the nature and requisites of a trust; the nature of the *cestui que* trusts interest; the transfer of trust property; the extinguishment of a trust; the duties of a trustee.

(b) In addition to the above this course will also include some lectures upon mortgages and upon Equity Pleading and Practice.

Ames' Cases on Trusts.

Pleading

Common law pleading; common law actions; pleadings; their history, form and effect; the rules of pleading.

Ames' Cases on Common Law Pleading.

Perry on Pleading.

Property II

Acquisition of real property, *inter vivos*; original acquisition; lapse of time; statute of limitations; prescriptions; form of conveyance; description of property granted; boundaries; estates created; incorporeal hereditaments; covenants for title; execution of deeds; signing and sealing; delivery; estoppel; dedication.

Kinds of wills; testamentary power; beneficiaries; property given; who may make a will; contract to make a will; form of will; incorporation of outside documents; signing; witnesses; publication; mistake; fraud; undue influence; revocation; re-publication; grant of probate and administration; the estate of an executor or administrator; alienation of administrators and executors' legacies; distribution; construction.

Gray's Cases on Property, Vol. III and IV (Second Edition).

Chaplin's Cases on Wills.

FOURTH YEAR

Bankruptcy and Statutory Law

Several lectures on important Massachusetts statutes, including the Business Corporation Law and the Employers' Liability Act. Most of the time in the course, however, will be given to the law of bankruptcy, particularly under the Bankruptcy Act of 1898 and amendments. Cases illustrating

the general principles of bankruptcy law and the more important sections of this act, will be discussed.

Williston's Cases on Bankruptcy.

Constitutional Law

Written and unwritten constitutions; history and sources of written constitutions in the United States, state and national; establishing and amending constitutions; distribution of powers between the national and state governments; distribution of powers among the three departments; theory and consequences of this distribution; the judicial department; nature of judicial power; power of the courts to declare void an act of the legislature or of the executive; jurisdiction of the federal government, criminal and civil; express, implied and resulting powers; citizenship; civil and political rights; the police power; the right of eminent domain; taxation; impairment of contracts, *ex post facto* and retrospective legislation generally; regulation of commerce.

Thayer's Cases on Constitutional Law.

Cooley's Principles of Constitutional Law.

McClain's Cases on Constitutional Law.

Boyd's Cases on Constitutional Law.

Court Practice

Several lectures on Court Practice and Procedure are given each year to the Senior Class by Judge Henry T. Lummus. These lectures are of extreme value to those about to enter practice.

Evidence

Judicial notice; judge and jury, or law and fact; burden of proof; presumptions; admissions; confession; principles of exclusion; relevancy character evidence; hearsay evidence and exceptions thereto, including declarations as to matters of pedigree, matters of public interest, public records, declarations in regular course of business, account-books, declarations against interest, *res gestae*, dying declarations, declarations made under oath, declarations showing physical or mental conditions; opinion evidence; best evidence; writings as evidence; examination of witnesses.

Greenleaf on Evidence.

McKelvey on Evidence.

Thayer's Cases on Evidence.

Wilgus' Cases on Evidence.

Massachusetts Practice

Jurisdiction of the courts and venue of actions, method of bringing suit, including attachment and service of process; pleading under the Massachusetts Statute; obtaining judgment and satisfaction of execution; exceptions and appeals. Also some discussion of Massachusetts probate and divorce law.

Buswell and Walcott on Massachusetts Practice.

Partnership

The creation of a partnership; *quasi* or nominal partners; the partnership property and the interest of a partner therein; rights and remedies of creditors; the power of a partner to act in behalf of the partnership, before and after dissolution; rights and duties between partners *inter se* and actions between partners; dissolution and termination of partnership; accounting and distribution.

Ames' Cases on Partnership.

George on Partnership.

Lindley on Partnership.

Property III

Conditional and future interests in real and personal property, including conditional estates, reversions and remainders, rule in Shelley's Case, and rule against perpetuities; forfeiture and restraints on alienation.

Gray's Cases on Property, Vol. V and VI.

Gray's Rule against Perpetuities.

Gray's Restraints on the Alienation of Property.

Special Course

A special course in selected topics covering a period of sixteen weeks, is given by Mr. Newhall and Mr. Dorman. This course includes the following subjects:

SETTLEMENT OF ESTATES, including the winding up of the estates of descendants in the Probate Court, and a brief presentation of the management of trust properties.

JOINT OWNERSHIP.

RECORDING AND REGISTRATION, including the scope and effect of the Recording Acts in Massachusetts, with especial reference to conveyancing and real property.

CARRIERS.

SURETYSHIP, comprising the rights and obligations subsisting among the three parties involved in a suretyship transaction; namely,—principal obligor, surety and obligee.

General Information

QUIZZES

In addition to the formal lectures of the first and second years the students meet twice weekly throughout the year for a systematic review of the material covered by the regular lectures. These "quizzes" are conducted by experienced instructors.

Students are also encouraged to form quiz clubs among themselves, since in law, as in other branches of knowledge, discussion develops mental power.

SUPPLEMENTARY LECTURES

We plan to offer each year a series of special lectures by leading members of the Bar. These lectures are arranged to present subjects not included in the regular program. Admission is free to all who are or have been identified with the school. Members of the Suffolk Bar and other Law Schools are also welcome.

EXAMINATIONS

Examinations are regularly held during the months of February and May, and students are examined but once in each course. Those failing to pass these examinations, also applicants for advanced standing, are required to present themselves for examination in September. The examination schedule for September, 1912, will be found on page 4.

TUITION

The rate of tuition is \$75 per year, payable \$25 on entrance, \$25 on November 15 and \$25 on January 15. This fee includes all the club privileges of the Association. Candidates for the degree are assessed \$5 as a graduation fee.

Single subjects when authorized, will be charged for at the rate of \$25 for eight, and \$15 for four months' courses, not including membership in the Association.

TEXT-BOOKS

Text or case books are required in many of the courses. These books may be purchased by the student, or, if convenient, the books of the Association Library may be used in the building. It is found advantageous for a student to own the books in order that he may better employ his hours at home. Law books are not sold by the Association, but lists are suggested by the several instructors. Cost of text-books \$15-\$20 per year.

Note books and general supplies may be obtained at the Association office at reasonable rates.

PURCHASE AND SALE OF NOTES

Students are expected to take notes of all lectures in person and to be prepared to hand in their note books for examination when called for. The purchase and sale of notes is absolutely prohibited, unless authorized in writing by the Dean.

Graduates

The following men have been granted the degree of LL.B. in previous years:

Name	Residence	Year of Graduation	Admitted to the Mass. Bar
David James Aaron	Allston	1911	1911
Philip Julius Aaronofsky	Roxbury	1911	1911
Walter Pennington Abell	Roslindale	1910	1910
Thomas Donald Adair	Roxbury	1909	1909
Asa Samuel Allen	Roxbury	1912	
George Pomeroy Anderson	Boston	1907	1909
Henry Nathaniel Andrews	Boston	1909	1909
John Alfred Anderson	Boston	1911	1911
Henry James Angell	Los Angeles, Cal.	1906 (Cal.)	1906
Arthur Wykeham Ashenden	Dorchester	1908	1909
John Joseph Attridge	Boston	1905	1906
Charles William Babson	Dorchester	1911	1911
Harry Lee Bagley	Brookline	1912	
Edward Holbrook Baker, Jr.	Cambridge	1911	1911
William Brooks Baker	Danvers	1909	1910
James Thomas Baldwin	E. Braintree	1912	
Charles Edward Baltzo	Melrose	1912	
William Henry Barter	Dorchester	1907	1907
Charles Henry Bartlett	Boston	1902	1901
*William Williams Bartlet	Roxbury	1902	
Henry Albert Bascom	Malden	1912	
Sanford Bates	Dorchester	1906	1906
William Henry Bazley	Everett	1912	
Benjamin Franklin Beale	Boston	1908	
*Charles Currier Beale	West Medford	1907	1907
Roscoe Hosmer Belknap	Framingham	1907	
William Antcliffe Bellamy	Taunton	1910	1910
Edward Sherman Bennett	South Boston	1908	1908
Samuel Tompkins Bennett	Malden	1912	
Gilbert Bezanger	Winthrop	1909	1909
John Bianchi	Newtonville	1910	1910
Robert Edward Bigney	South Boston	1912	
Thomas Herbert Bilodeau	Boston	1909	1909
Grosvenor Tarbell Blood	Newburyport	1904	1904
Francis Henry Blackwell	Boston	1908	1907
Robert Ross Thompson Bower	Boston	1903	1903
George Grant Brayley	West Somerville	1911	1910
Joseph Thomas Brennan	Cambridge	1904	1904
Thomas Francis Brennan	Cambridge	1907	1908
Corril Ellsworth Bridges	Charlestown	1902	1902
Philip Anthony Brine	Somerville	1906	1906
Leslie Nicholas Brock	Cambridge	1911	1911
Lyman Warren Brooks	Watertown	1910	1911
Dennis Francis Buckley	Georgetown	1902	1903
Timothy John Buckley	Charlestown	1902	1902

Winslow Page Burhoe	Somerville	1911	1910
John Joseph Burke	Boston	1912	
William Herbert Burke	Worcester	1910	1911
Richard Walter Burnes	Everett	1911	1911
Ralph Norman Butterworth	Revere	1910	1909
James William Byron	Concord	1910	1910
Robert Campbell	Boston	1908	1908
John Bernard Canfield	Newton	1910	1910
Moses Caplan	Boston	1911	1911
Warren Frederick Card	Lynn	1912	
Michael John Carey	Somerville	1907	1908
Hugh Augustus Carney	Roxbury	1911	1911
Dennis Francis Carpenter	Dorchester	1906	
George Henry Carrick	Cambridge	1910	1910
Frederic Carroll	London, England	1904	1904
James Edward Carroll	Boston	1907	1907
James Thomas Carter	Dorchester	1910	1910
Henry Elton Chamberlin	Boston	1908	
Walter Watson Chambers	East Dedham	1905	1906
Henry Victor Charbonneau	Lowell	1909	1909
Benjamin Harrison Chertok	Dorchester	1911	1911
Cyrus Stewart Ching	Boston	1912	
Alfred Pugh Clark	Allston	1904	1904
John Joseph Coady	Dorchester	1907	1906
John Henry Coakley	Chelsea	1903	1903
Edgar Weston Cobb	Medford	1911	1911
George Cohen	Somerville	1912	
Timothy Francis Collins	Arlington	1902	1902
Charles Alfred Colton	Winthrop	1909	1909
Arthur Lester Connolly	Boston	1903	1903
Charles Carthage Connor	New Bedford	1904	1904
William Francis Connor	Waltham	1906	1906
John Joseph Conway	West Roxbury	1912	
Lester Wilkins Cooch	Everett	1912	
Edwin Horace Cooley	Brookline	1903	1903
Fred William Cousins	Medford	1910	1910
John McLean Crawford	Charlestown	1905	1905
Joshua Aaron Crawford	Boston	1911	1911
Francis Aloysius Cronin	Roxbury	1908	
John Cornelius Cronin	South Boston	1906	1906
Daniel Francis Cunningham	Brighton	1907	1907
Maurice Francis Cunningham	Cliftondale	1907	1907
Ralph Bertrand Currier	Chelsea	1912	
Daniel John Daly	Brookline	1907	1907
William John Daly	Winchester	1908	1907
Henry Wesley Davies	Ballardvale	1909	1908
Samuel Davis	Boston	1909	1907
John Bernard Dayton	Somerville	1908	1908
Michael John Dennen	Winchester	1907	1907
John Henry Devine	Brighton	1907	1907
Adolph Isaac Dinner	Roxbury	1910	1910
Otis John Auguste Dionne	Walpole	1911	1911
James William Dolan	Waltham	1904	1904
Peter Jefferson Donaghue	Dorchester	1904	1904
Daniel Augustine Donahue	Jamaica Plain	1911	1911
Patrick Joseph Dowd	Waltham	1906	1906
Michael Joseph Doyle	Boston	1906	1906
Wilfred James Doyle	Mattapan	1912	
James Michael Driscoll	Brookline	1908	1907
John Francis Dunn	Dorchester	1905	1907

Leo Joseph Dunn	Roslindale	1912	1911
Albert Cooledge Eames	Boston	1907	1908
Ernest Doane Easton	Providence	1909	
John William Eldracher	Boston	1912	
Shirley Howe Eldridge	Waltham	1910	
George Robert Ellis	Foxboro	1912	
John Henry Ells	Dorchester	1905	1904
Harry Alexander English	Jamaica Plain	1911	1911
Chester Everett	Boston	1909	1909
David William Everett	Boston	1909	1909
Andrew Franklin Faden	Jamaica Plain	1909	
Michael Laurence Fahey	Charlestown	1904	1904
Norman Farquhar	Boston	1912	
James Edward Farrell	West Newton	1908	1908
Horace Porter Farnham	Peabody	1905	1905
Philip Joseph Feinberg	Boston	1912	
Charles Augustus Ferguson	Malden	1908	1909
Edward Ferguson	Cambridge	1908	1909
John Mix Finch	Everett	1906	1907
Frank Hervey Fittz	Waltham	1912	
Thomas Jefferson Fitz	Melrose Highlands	1909	1911
Percival FitzGerald	Mattapan	1911	
Edward Richard Flavell	Boston	1908	
David Flower	Roxbury	1911	1911
William Forbes	Boston	1911	1911
John Gregory Fortune	Malden	1905	
Walter Frank Foss	Norwood	1907	
Isidor Fox	Revere	1903	1903
Morris Burton Frankel	Boston	1905	1905
Harry LeRoy French	Waltham	1907	1907
William Philip French	West Somerville	1909	1908
Frank Freundlich	Boston	1912	
William Caleb Frye	Winthrop	1910	1910
Clarence Jesse Funnell	Boston	1910	1909
John Francis Gannon	Worcester	1912	
Frederick Alfred Gaskins	Milton	1902	1903
William Joseph Geegan	West Newton	1911	1910
Carl Gerstein	Boston	1904	1904
Martin Gilbert	Roxbury	1907	1908
Jos. Julian Orphee Gingras	Lynn	1910	1910
Wallace Alfred Gleason	West Roxbury	1908	1908
Walter Howard Gleason	Watertown	1910	1910
Ralph Clifton Glidden	Reading	1910	1910
Abraham Goldberg	Boston	1912	1911
Harry Klauser Good	Roxbury	1912	
Isaac Gordon	Boston	1905	1905
Charles Emmett Gorman	Roslindale	1912	
Walter William Graves	Salem	1903	1902
Hamlet Samuel Greenwood	Lowell	1906	1906
William John Greene	Cambridge	1902	1902
Reuben Bertram Gryzmish	Boston	1912	
Mederic Guilbault	Medford	1902	1903
Thomas Max Gurin	Boston	1910	1911
August George Gutheim	Washington, D. C.	1904	1904
Dennis William Haggerty	Boston	1907	1907
Frank Howard Hallett	Dorchester	1910	1910
Charles Edward Halliday, Jr.	Lynn	1912	
Reginald Hainsworth	Cambridge	1903	1903
John Hamilton, Jr.	Jamaica Plain	1906	1907
John Joseph Haney	Medford	1912	
John Emmet Hanlon	Dorchester	1910	1910

Joseph Charles Hannon	West Newton	1912	
Edward Warren Harnden	Boston	1906	1906
Edward Lavant Harris	Arlington	1912	
John Michael Hayes	Dorchester	1906	1906
Walter Joseph Hendrick	Boston	1912	
Michael Aloysius Henebery	Worcester	1908	1908
Thomas Aloysius Henry	Salem	1910	1910
William Martin Henry	Salem	1910	1910
Daniel Melbourne Herlihy	Boston	1907	1907
Jeremiah George Herlihy	Roxbury	1910	1910
Ralph Eugene Hiland	Everett	1910	1910
William Francis Hill	Dedham	1911	1911
Don Gleason Hill, Jr.	Dedham	1909	1909
William Hirsh	Dorchester	1907	1907
George Preston Hitchcock	Brookline	1910	1910
Walter Lawrence Hobbs	Boston	1906	1906
Frederick Hoitt	Boston	1912	
William Jason Holbrook	South Weymouth	1907	1906
Gustav Ferdinand Hollstein	West Roxbury	1912	
Jesse Allen Holton	Boston	1910	1910
George Willard Hopkins	Concord	1908	1909
Henry Hopkinson	Jamaica Plain	1911	1911
Charles Edward Houghton	Hyde Park	1908	1909
Perry Brooks Howard	Watertown	1909	1910
William Francis Howard	Dorchester	1909	1909
William Frank Joseph Howard	South Boston	1912	
William Everett Howe	Quincy	1910	1910
Albert Edward Hughes	Somerville	1906	1907
*John Hughes	Boston	1907	
Samuel Hurwitz	Roxbury	1905	1905
Lawrence Woodbury Huse	Boston	1909	1909
Fernald Hutchins	Dedham	1907	1907
Abram Hyman	Boston	1905	1906
Myer Harry Isaacson	Dorchester	1912	
Guy Atwood Jackson	Dorchester	1910	1910
Walter Scott Jardine	Arlington	1912	
William Barton Jenson	East Boston	1904	1904
George Marshall Jewell	Everett	1910	1910
*Charles Sumner Johnson	South Boston	1906	
Leo Sidney Jolles	Dorchester	1904	1904
Morris Jolles	Roxbury	1908	1908
Louis Agassiz Jones	W. Somerville	1910	1910
Loring Pierce Jordan	Boston	1907	1907
Wilbur Aaron Jordan, Jr.	Dorchester	1910	1910
Max Manuel Kalman	East Boston	1908	1910
Arthur Francis Keefe	Everett	1907	1907
Frank Roland Keith	Dorchester	1912	
Bernard Charles Kelley	South Boston	1905	1907
Luke Joseph Kelley	Jamaica Plain	1912	
Thomas Kelley	Boston	1906	1905
Frederick Austin Kennett	Dorchester	1911	1911
Richard Ernest Kent	East Boston	1908	1908
Francis Warren Kimball	Chelsea	1908	1908
Maurice Kronick	Boston	1910	1910
Samuel Thomas Lakson	East Boston	1912	
Percy Francis Lannon	Roslindale	1906	1907
George Latimer	Boston	1902	1903
Thomas James Lawler	Dorchester	1907	
Henry Lawrin	Boston	1910	1910
*Howard Newton Legate	Roxbury	1908	1908
Timothy Francis Leonard	Charlestown	1912	

Louis Levin	Boston	1904	1905
Everett Charles Lewis	Medford	1907	1907
Finch Elbert Lewis	West Somerville	1912	
George Henry Locke	Denver, Col.	1906	
Harold Wesley Loker	Swampscott	1910	1910
Henry Nathaniel Longley	East Braintree	1912	
Harrison Loring, Jr.	Roxbury	1908	1908
John Bailey Loring	Dorchester	1902	1901
Edwin Tibbetts Luce	Arlington	1908	1908
Charles Henry Lutton	South Boston	1902	1902
Daniel Francis Lynch	Roxbury	1909	
John Michael Lyons	East Weymouth	1912	
Alfred Carl Malm	Brighton	1911	1911
Thomas Bernard McCaffrey	Brookline	1912	
James Francis McDermott	Boston	1909	1909
Herman Albin MacDonald	Beverly Farms	1910	1910
Hugh Boniface McEachern	South Boston	1905	1907
Frederick William McEnery	Cambridge	1907	1907
Edward Aloysius McEttrick	Brookline	1908	1907
Frederick William McGowan	Medford	1911	1911
Edward MacHarrie	Somerville	1902	1902
William John MacInnis	Gloucester	1912	
James Alvin McKibben	Dorchester	1906	1905
George Alexander McKinnon	Cambridge	1902	1902
John Edward MacKinnon	East Boston	1903	1903
James Preston Mackin	Boston	1910	
Abner Sterling McLaud	Lynn	1912	
Arthur Hawes McLearn	Dorchester	1912	
Patrick Joseph Madigan	Boston	1910	1910
Frederick Huntley Magison	Haverhill	1910	1910
Francis Louis Maguire	Arlington	1903	1903
George Henry Magurn	East Boston	1902	1903
John Cornelius Mahoney	Worcester	1912	
William Raymond Mahoney	Cambridge	1912	
Thomas Joseph Maloney	Charlestown	1906	1906
George Albert Mansfield, Jr.	Waltham	1912	
Thomas Francis Mansfield	East Boston	1904	1904
Frank Eliot Marble	Lynn	1909	1910
John Henry Mattson	Lynn	1911	1910
Peter Francis Minnock	Waltham	1906	1906
Francis Moloney	Charlestown	1906	1906
Charles Leroy Moore	Malden	1908	1907
Leslie Rogers Moore	Newton	1912	
Stephen Francis Morgan	Charlestown	1906	1906
Augustin Vincent Murphy	Dorchester Centre	1910	1910
Bernard Francis Murphy	Waltham	1907	1909
Hubert Aloysius Murphy	Dorchester	1906	1905
Alexander William Murray	Cambridge	1910	1910
Alexander Nagle	Boston	1912	
Thomas Vinson Nash	Weymouth	1908	1910
George Nelson	Boston	1909	1910
William Nelson	Boston	1908	1907
Andrew Potter Nichols	Fall River	1911	
William Ignatius Norton	Boston	1909	1909
Charles Joseph O'Connell	Worcester	1909	1909
Frederick William Otto	Dorchester	1903	1902
George Yenetchi Parker	Charlestown	1904	1902
Leonard Wesley Parker	Boston	1905	1906
Albert Leslie Partridge	Waltham	1910	1910
Orton Abner Peck	Boston	1911	1911
Reginald Ebenezer Peters	Cambridge	1912	1911

William Henry Peterson	Cambridge	1911	1911
William Peyton	Boston	1902	1903
Chester William Pike	Dorchester	1911	
William John Pike	Chelsea	1910	1910
John Isaac Preston	Wakefield	1911	1911
George Prussian	Roxbury	1911	1911
John Quinn, Jr.	Boston	1906	1906
John Edward Quinn	Cambridge	1906	1906
Benjamin Rabalsky	Boston	1912	1911
Frederick Rabinovitz	Boston	1911	1911
Edward Clarence Ramsdell	Brighton	1907	1907
Peter Ratzkoff	Roxbury	1910	1910
Edward Waterman Raymond	Boston	1908	
Ernest Orlando Raymond	Somerville	1906	1906
George Whitehorne Reed	Roxbury	1903	1903
Arthur Elmer Reimer	South Boston	1912	
Arthur Bickford Rigney	Haverhill	1910	1910
Ralph Henderson Robb	Boston	1912	
Fred Louis Roberts	West Somerville	1908	1909
James Percy Roberts	Dedham	1912	1911
Henry Burgess Roberts	Somerville	1906	1906
Allan Robinson	Revere	1910	1910
James Lewis Roche	Lincoln	1909	1909
George Edward Roewer, Jr.	Boston	1909	1909
John Francis Rogan	Charlestown	1906	1905
Charles Henry Rogers	New York	1906	1906
Francis James Rogers	East Boston	1912	
John William Roome	Dorchester	1911	
William DeForest Ross	Wollaston	1909	1909
Samuel Rothblum	Dorchester	1906	1906
Louis Joseph Rouleau	Jamaica Plain	1911	1911
Daniel David Rourke	Boston	1907	
Elmer Gould Royce	Northboro	1908	1909
Joseph Louis Philip St. Coeur	Cambridge	1902	1902
William Thomas Salter	Boston	1909	1909
Joseph Albert Sedgwick	Quincy	1905	
Michael Seretto	Boston	1912	
Julian Seriaek	Dorchester	1903	
James Joseph Sheehan	Peabody	1902	1902
Leon Leland Silbert	Roxbury	1912	
Nicholas John Skerrett	Worcester	1912	
Koran Calvin Small	Waltham	1907	1906
Charles Marcus Smith	Boston	1908	1908
Ralph Merrill Smith	Somerville	1904	1904
Walter McCabe Smith	Cambridge	1912	
William Payson Smith	Dorchester	1905	1905
William Theis Smith	Somerville	1911	1911
Arthur Asher Sondheim	Roxbury	1904	1904
Elmer Ernest Spear	Everett	1910	1911
John Speirs	Dorchester	1903	1902
Henry George Spence	Roxbury	1904	1904
James William Spicer	Melrose Highlands	1910	
Robert William Stanley	Boston	1908	1908
Edmund Michael Stanton	Roxbury	1911	
George Edwin Stebbins	Boston	1912	1911
Arthur Lawrence Stevenson	Newton	1909	1908
William Booth Stevenson	Newton	1909	1909
Theodore Einar Stevenson	Roxbury	1911	1910
William Joseph Stone	Dorchester	1907	1908
Daniel Sullivan, Jr.	Boston	1905	
James Aloysius Sullivan	Boston	1909	1909

Joseph Francis Sullivan	Charlestown	1906	1906
Richard Rogers Sullivan	Charlestown	1912	
Thomas Francis Sullivan	Cambridge	1908	1910
Frank Brown Swain	Brockton	1907	1907
James William Sweeney	Quincy	1910	1910
Dana Scott Sylvester	Brookline	1909	1908
Frank Baldwin Tallmann	Malden	1902	1902
James Francis Terry	Boston	1912	
Ralph Lauris Theller	Cambridge	1905	1911
Ralph Carl Thulin	Brighton	1912	
Edward Armstrong Thomas	Winthrop	1907	1908
George Burchstead Tinkham	Roslindale	1911	
Nelson Barnard Todd	Lynn	1908	1908
Henry Patrick Trainor	Waltham	1907	1906
Frank White Tucker	Somerville	1908	1908
James Irwin Tucker	West Somerville	1909	
John Foster Tufts	South Weymouth	1906	1908
Frederick J. Turner	California	1912	
Lewis Augustine Twitchell	Dorchester	1911	
Israel Mark Ullian	Roxbury	1910	1910
Nathan Ullian	Boston	1912	
Calvin John Upham	Dorchester	1911	1911
James Boniface Vallery	Cambridge	1902	1902
Robert Comey Van Amringe	Roxbury	1910	1910
Samuel Parsons Vatcher	Lynn	1911	1911
Arthur William Vaughan	Somerville	1905	1905
Joseph Vecchioni	Boston	1912	
Howell Brackett Voight	Dorchester	1911	
Alexander Thurrott Walker	Forest Hills	1909	1909
George Edward Walker	Wakefield	1908	1908
John Joseph Ward	Medford	1910	1910
Jacob Wasserman	Boston	1908	1907
James Andrew Waters	Newton Centre	1911	1910
Otto Aloysius Wehrle	East Boston	1908	1908
Abraham Hermann Weinstein	Boston	1907	1906
Alfred Mayer Weismann	Jamaica Plain	1911	1911
Augustine Walter Welch	Watertown	1911	1911
William Joseph Welch	Roxbury	1904	1905
Alfred Little West	Somerville	1911	1911
Charles Gordon Whitcomb	Allston	1912	
David White	Boston	1904	1904
Jonathan Breck White	Watertown	1904	1904
James William Wickwire	Dorchester	1907	1907
Charles Chester Willard	Cambridge	1911	1911
Ralph Howard Willard	Boston	1911	1911
Harold Willis	Brookline	1912	
Maynard Addison Wood	West Somerville	1910	1910
Arthur Lorrin Woodman	Cambridge	1906	1906
James Graham Wolff	Allston	1911	1911
Frank Hubert Wright	Boston	1910	
Alonzo Ernest Yont	Dorchester	1905	1904
Robert Winthrop Young	Boston	1909	1909
Edward Hermann Ziegler	Roxbury	1907	1906
Edward Joseph Ziegler	East Dedham	1912	

*Deceased.

Rules of the State Board of Bar Examiners¹

I.

Every applicant for examination shall file his petition at least five days before the examination which he intends to take, and shall file either therewith or with the chairman or secretary of the board proof that he is entitled to be examined, together with evidence of his good moral character and of the course of study, both general and legal, pursued by him.

II.

The proof aforesaid shall include:—

First. A certificate signed by the applicant, stating his residence (name of city or town, with street and number, if any); place and date of birth; citizenship; course of general study prior to studying law; when and where he began the study of law; course of such study, and where he last studied law; any other occupation engaged in since he began the study of law; whether he has been examined before for admission to the bar, either within this Commonwealth or elsewhere, and if so, when and where, and with what result.

Second. A certificate of the attorney or attorneys with whom he has studied, or of the proper officer of the law school or schools attended, stating what the moral character of the applicant is and what course of study he has pursued.

It shall appear in such certificates whether such study has been pursued regularly and attentively, and what vacation was taken in any year. Several certificates may be made so as to cover the whole term of study in cases where such study has not been pursued exclusively in one office or school.

III.

Forms of the certificates to be filed under these rules may be obtained from the several clerks of court, or from the secretary

¹Reprinted from the *Statutes and Rules in relation to the Admission of Attorneys in Massachusetts.*

of the board. Further proof on any point may be required by the board, or, satisfactory reasons therefor being shown, such other proof of the requisite facts may be accepted as the board may deem sufficient. Petitions or proofs may be filed after the time fixed if satisfactory reasons are shown and permission is granted by the chairman or secretary of the board. Petitions referred to the board shall be returned to the files of the court with the report of the board attached thereto, but certificates and other papers filed with petitions may be retained by the board.

IV.

Examinations shall be held in Boston on or about January 1 and July 1 in each year. Due notice of the time and place of holding examinations shall be given.

V.

After an examination has been held and before the Board reports thereon, it shall give public notice of the names of the applicants appearing to possess the qualifications necessary for admission by publishing the same once, at least, in some newspaper having a general circulation throughout the Commonwealth; and such notice shall state, in substance, that upon a day named therein, if no objection shall be made, the board will report to the court that such applicants are found to be qualified. A copy of such notice shall be sent to the clerks of the several courts wherein petitions are pending.

VI.

No applicant under Revised Laws, chapter 165, section 43, and amendments thereof, whose application is referred to the board, shall be excused from taking a regular examination, unless he has been a member of the bar of the highest judicial court of some other state, district, territory or country and in actual practice, for at least three years; in which case it shall be within the discretion of the board, with the approval of the court, to excuse him from such examination. In the case of applicants recommended for admission under this rule notice shall be published in the manner provided by Rule V.

NEW RULE AS TO ACQUIREMENTS AND QUALIFICATIONS

VII.

This is quoted on page 16.

ADDITIONAL RULE OF BOARD OF BAR EXAMINERS AS TO TERM OF STUDY OF THE LAW

(August 1, 1910.)

VIII.

No person shall be eligible for examination for admission to the bar until he shall have devoted three full years, or their equivalent (usual vacations excepted), to the study of the law.

(The above rule was established by the board of bar examiners May 8, 1909, and was approved by the Supreme Judicial Court, to take effect from and after August 1, 1910.)

ADDITIONAL SUGGESTION OF BOARD OF BAR EXAMINERS AS TO TERM OF STUDY OF THE LAW

Term of Study of the Law

The board will consider as a compliance with the provisions of Rule VIII of the board, three years' study in any law school having a three years' course and holding regular day sessions; or four years' study in any evening law school having a four years' course.

General Departments

DEPARTMENT OF PHYSICAL WORK

ALBERT E. GARLAND, M.D., B.P.E., Director

The Physical Department is under the best supervision and the aim is to better fit men for their life work by increasing their efficiency through exercise. We offer: Well equipped gymnasiums, Recreative, Hygienic, and Educational Gymnastics. Numerous classes the year round. Shower, steam and electric baths. Best instruction. Medical direction. Hand ball courts. Basket ball, baseball and athletics.

DEPARTMENT OF RELIGIOUS WORK

EDWIN W. PEIRCE, Director

In order that a young man may secure a well-balanced development and attain a spiritual foundation for successful life work the Association advises each member in planning his schedule to enter into one or more of the following activities:—

Bible Study, Sunday Meetings of Men, Personal Service Groups, and The Twenty-Four-Hour-A-Day Club.

(Ask for Bible Institute catalog and other printed matter.)

DEPARTMENT OF SOCIAL WORK

DAVID M. CLAGHORN, Director

The attention of members is called to the many opportunities in the Association for social service, and the following social features.

A Newly Equipped Game Room. The Popular Novel Club.
The Association Congress. The Land and Water Club.
Popular Social Evenings.

DEPARTMENT OF EMPLOYMENT

FREDERICK W. ROBINSON, Director

The Employment Department is in actual practice, a clearing house for young men seeking work, and employers who wish to engage reliable help. From 5000 to 8000 men apply every year. Members of the Association are given 25 per cent discount from the legal rates and special effort is made to notify them when good positions are open.

BOYS' DEPARTMENT

DON S. GATES, A.B., City Secretary

The physical, social, employment and religious advantages offered to boys from twelve to eighteen years, are similar to those offered to men as stated above. Membership dues for the boys range from one to six dollars according to the privileges desired. Boys' work is also organized in the North End, the South End and Roxbury.



School of Commerce & Finance



AN INCORPORATED INSTITUTION OF COLLEGE GRADE

CATALOGUE
1912 - 1913

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

10 ASHBURTON PLACE, BOSTON, MASS.

UNTIL JANUARY 1, 1913—THEREAFTER

Y. M. C. A. BUILDING, HUNTINGTON AVENUE

BOSTON, MASS.

ANNOUNCEMENT

OF THE

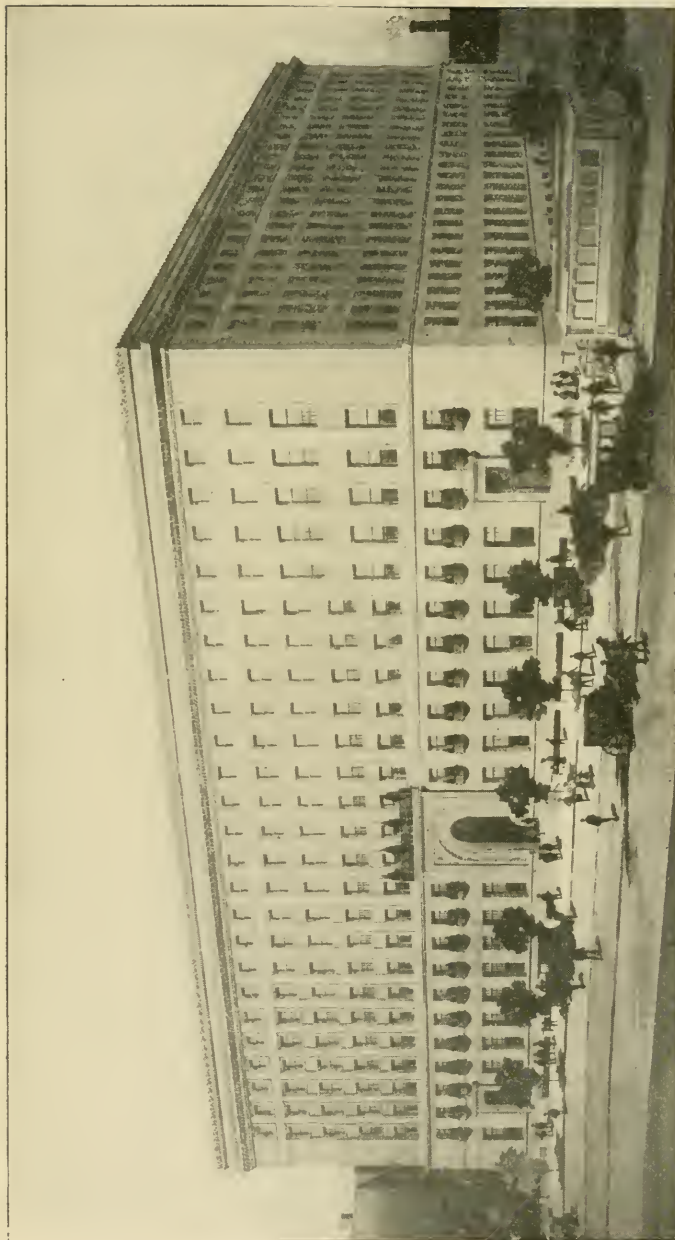
School of Commerce and Finance

1912-1913



PUBLISHED BY THE

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION



OUR NEW HOME

The above cut represents the new Association Building now under process of construction on Huntington Ave. It will contain among other features, school accommodations of the very best, a fine gymnasium, bowling alley, swimming pool, cafe, dormitories, shops and laboratories, camera club rooms, social and recreative rooms and auditorium.

Officers of Administration

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION



General Administrative Officers

ARTHUR S. JOHNSON, *President*

JACOB P. BATES, *Vice-President*

HAROLD PEABODY, *Recording Secretary*

FRANCIS B. SEARS, *Treasurer*

GEORGE W. MEHAFFEY, *General Secretary*



Educational Committee

JOHN E. ROUSMANIERE, *Chairman*

WILLIAM E. MURDOCK

ALBERT H. CURTIS

MORGAN L. COOLEY

GEORGE P. HITCHCOCK



Educational Administrative Officers

FRANK P. SPEARE, *Educational Director*

GALEN D. LIGHT, *Asst. Educ. Director and Bursar*

H. W. GEROMANOS, *Supt. of Evening School System*

IRA A. FLINNER, *Supt. of Day School System*

CHARLES B. GRAY, *Secretary*

SCHOOL OF COMMERCE AND FINANCE

Calendar

1912

Aug. 5 to Sept. 13	Course in Elementary Bookkeeping
Sept. 16, 17, 18 (7 P.M.)	Entrance examination in Elementary Bookkeeping
Sept. 17 (7 P.M.)	Examinations for removal of conditions
Sept. 20 (7 P.M.)	Organization of classes
Sept. 23 (7 P.M.)	Opening of the first term
Oct. 12	Columbus Day
Nov. 28	Thanksgiving Day
Dec. 24 (9.30 P.M.)	Christmas vacation begins

1913

Jan. 6 (7 P.M.)	Christmas vacation ends
Jan. 24	Close of the first term
Jan. 27	Beginning of the second term
Feb. 22	Washington's Birthday
April 19	Patriots' Day
May 30	Memorial Day
June 9-13	Final examinations

Directors

ARTHUR S. JOHNSON, President of the Boston Y. M. C. A.

GEORGE W. MEHAFFEY, General Secretary of the Boston Y. M. C. A.

FRANCIS B. SEARS, Treasurer of the Boston Y. M. C. A.

FRANK P. SPEARE, Educational Director of the Boston Y. M. C. A.

JOHN E. ROUSMANIERE, Chairman of the Educational Committee of the Boston Y. M. C. A.

WILLIAM E. MURDOCK, of the firm of Sampson & Murdock Company, Publishers

ALBERT H. CURTIS, General Agent, N. E. Mutual Life Insurance Company

JOHN SHEPARD, Shepard, Norwell Company

JESSE S. WILEY, Retired

JACOB P. BATES, President of Cobb, Bates & Yerxa Company

FRANK W. CARTER, President of Boston Belting Company

F. R. CARNEGIE STEELE, of the firm of Patterson, Teele & Dennis, Certified Public Accountants

EDWIN F. GAY, Dean of the Harvard Graduate School of Business Administration

MORGAN L. COOLEY, New England Manager of Gunn, Richards & Company, Certified Public Accountants

WILLIAM DILLON, Certified Public Accountant

HERBERT F. FRENCH, of the firm of Herbert F. French & Company, Certified Public Accountants

AMOS D. ALBEE, of the firm of Amos D. Albee, Son & Company, Certified Public Accountants

GEORGE L. BISHOP, of the firm of Storer, Rand & Bishop, Certified Public Accountants

HARVEY S. CHASE, of the firm of Harvey S. Chase & Company, Certified Public Accountants

GEORGE W. COLEMAN, Director of Publicity, W. H. McElwain Company

ALFRED D. FOSTER, President of the New England Mutual Life Insurance Company

JOSEPH FRENCH JOHNSON, Dean of the New York University School of Commerce, Accounts and Finance

J. EDWARD MASTERS, New England Manager of the firm of Price, Waterhouse & Company, Chartered Accountants

JAMES P. MUNROE, Chairman of the Committee on Education, Boston Chamber of Commerce

SILAS PEIRCE, President of Silas Peirce Company

SCHOOL OF COMMERCE AND FINANCE

Officers

JACOB P. BATES, President

FRANK W. CARTER, Vice-President

JOHN E. ROUSMANIERE, A.B., LL.B., Secretary

FRANK P. SPEARE, M.H., Dean

HARRY C. BENTLEY, C.P.A., Assistant Dean

GALEN D. LIGHT, A.B., Bursar

KATHERINE M. VINTON, Recorder



EXECUTIVE COMMITTEE

F. R. CARNEGIE STEELE, F.C.A., C.P.A., Chairman

FRANK W. CARTER

WILLIAM DILLON, C.P.A.

MORGAN L. COOLEY, C.P.A.

HERBERT F. FRENCH, C.P.A.

FRANCIS B. SEARS



OFFICE HOURS

The office of the School is open every week day, except on holidays, from 9 A.M. to 9 P.M.

The Dean will be in his office from 9 A.M. to 5 P.M., except Saturday afternoons.

The Assistant Dean will be in his office from 12.30 A.M. to 5 P.M., except Saturday afternoons; Monday, Wednesday, and Friday evening from 7.30 to 9.30 during July and September; and during the school year on Wednesday evening from 8.30 to 9.30.

Faculty

FRANK PALMER SPEARE, M.H.

Dean, and Lecturer in Business Organization and Administration

HARRY C. BENTLEY, C.P.A.

Assistant Dean, and Head of the Department of Accountancy

GUY NEWHALL, A.B., LL.B.

Head of the Department of Business Law

ARTHUR S. DEWING, Ph.D.

Head of the Department of Economics

NORMAN I. ADAMS, A.B.

(Manager of Credit Department, The National Shawmut Bank), Lecturer in Commercial Credits

GEORGE PRESTON BACON, A.M.

Lecturer in the Mathematics of Cost Accounting

WALTER W. BECKETT

(Chief Accountant, Stone & Webster), Lecturer in Syndicate Accounting

W. J. BOARDMAN, A.B.

(of the firm of George Batten Company), Lecturer in Publicity

A. P. BROWN

(of F. S. Mosely & Co., Bankers), Instructor in Commercial Paper

CHARLES P. BROWN

(General Purchasing Agent, Regal Shoe Co.), Lecturer in Buying

WILLIAM E. BUTLER

(President of W. S. Butler Co. and Treasurer of Gilchrist Co.)
Lecturer in Buying

HARVEY S. CHASE, B.S., C.P.A.

(of Harvey S. Chase & Co.), Lecturer in the Audit of Life Insurance Companies

NEWTON D. CLARKE, A.B.

Instructor in Business Arithmetic (Normal Course)

MORGAN L. COOLEY, C.P.A.

(New England Manager of Gunn, Richards & Co.), Lecturer in Accounting

H. E. DeWOLFE

(Systematizer for the American Woolen Company), Lecturer in Business Organization and Administration

SCHOOL OF COMMERCE AND FINANCE

WILLIAM E. DORMAN, A.B., LL.B.

Instructor in Business Law

ALBERT DUNBAR, S.B.

(Purchasing Agent, Massachusetts Gas Companies), Lecturer in Buying

E. M. FISHER, A.B.

(Supervisor of Selling—Wm. Filene's Sons Company), Lecturer in the Organization and Administration of a Retail Selling Force

EDWARD E. FOWLER

(New England Agent of the Barrett Adding Machine Co., and former Instructor of Salesmen for the National Cash Register Co.), Lecturer in Selling

CHARLES F. GETTEMY, A.M.

(Director of the Bureau of Statistics of the Commonwealth of Massachusetts), Lecturer in the Relation of Accounting Procedure and Financial Administration to Efficient Municipal Government

HERBERT A. GIDNEY

(Auditor for Charles H. Tenney & Co.), Lecturer in Public Service Corporation Accounting

JAMES H. HANFORD, Ph.D.

Instructor in Business English

BENJAMIN S. HINCKLEY, S.B.

(Purchasing Agent of Boston & Maine Railroad), Lecturer in Buying

FERDINAND M. HOLMES

(Trust Officer Old Colony Trust Co.), Lecturer in Accounting for Executors and Trustees

GEORGE W. HOPKINS, LL.B.

(Manager of Specialty Department, Loose-Wiles Biscuit Company)
Lecturer in Selling

WILLIAM S. KEMP

(Treasurer of The Holtzer-Cabot Electric Co.), Lecturer in Administration and Accounting Methods of a Manufacturing Plant

RAYMOND G. LAIRD, B.C.S., C.P.A.

Instructor in School Room Organization and Administration. (Normal Course)

S. R. LATSHAW, A.B.

(New England Manager of Curtis Publishing Co.), Lecturer in Publicity

MYRON C. LECKNER, A.B.

(of the Curtis Publishing Co.), Lecturer in Publicity

HENRY D. LOVE, C.P.A.

(of Harvey S. Chase & Co.), Lecturer in Bank Examinations

FACULTY

✓ HAROLD A. MARVIN, C.P.A.

(of Gunn, Richards & Co.), Lecturer in Advanced System Building

✓ J. EDWARD MASTERS, C.P.A.

(New England Manager of Price, Waterhouse & Co.), Lecturer in Special Investigations

✓ MELBOURNE S. MOYER, B.C.S., C.P.A.

(Of Barclay Parsons and Klapp, New York), Lecturer in Public Service Corporation Accounting

✓ JOHN J. MUNDO

(Manager of Credit Department, Jordan Marsh & Co.), Lecturer in Retail Credits

✓ ARTHUR F. O'MALLEY, A.M.

Instructor in Principles of Education (Normal Course)

✓ A. APPLETON PACKARD, S.B.

(Of the Fore River Shipbuilding Co.), Lecturer in Factory Organization and Administration

✓ A. R. PATTERSON

(Auditor, Stone & Webster Management Association), Lecturer in Public Service Corporation Accounting

✓ H. W. READ, B.S.

(Local Manager of Baker-Vawter Co.), Lecturer in Commercial Credits

✓ WALTER G. RESOR, A.B.

(New England Manager of J. Walter Thompson Co.), Lecturer in Publicity

✓ C. F. RITTENHOUSE

Instructor in Penmanship (Normal Course)

✓ FRANCIS B. SEARS

(Vice President of the Shawmut National Bank), Lecturer in Bank Organization

✓ OLIVER M. W. SPRAGUE, Ph.D.

Lecturer in Advanced Banking

✓ F. R. CARNEGIE STEELE, F.C.A., C.P.A.

(Of the firm of Patterson, Teele and Dennis), Lecturer in Advanced Accounting

✓ FREDERICK W. TAYLOR

(Consulting Engineer), Lecturer in Scientific Management

✓ ALFRED J. THOMPSON

Instructor in Accounting

SCHOOL OF COMMERCE AND FINANCE

√ FRANCIS W. TULLY, A.B.

(Publicity Manager of Wm. Filene's Sons Co.), Lecturer in Publicity

√ THEODORE N. WADDELL

(Chief Statistician, Municipal Division. Bureau of Statistics), Lecturer in the Terminology and Classification of Municipal Receipts and Expenditures

√ BARRETT WENDELL, Jr., A.B.

(Of Lee, Higginson & Co., Bankers), Lecturer in Bond Salesmanship

√ GEORGE H. WILLCOCKSON

(Treasurer of Loose-Wiles Biscuit Company), Lecturer in Commercial Credits

√ JAMES WILLING, C.A.

(Of Patterson, Teele and Dennis), Lecturer in Advanced Auditing

General Statement

The School of Commerce and Finance is a technical institution of college grade, offering its regular courses through evening sessions only. It was incorporated in January, 1911; in March of the same year the Massachusetts Legislature granted it power to confer upon its students the degrees of B.C.S. (Bachelor of Commercial Science) and M. C. S. (Master of Commercial Science.)

The School was formally opened September 25, 1911 with a total enrollment of one hundred and fifty-three students, of an average age of twenty-five years. The classes included in their number accountants, lawyers, professional engineers, book-keepers, credit-men, salesmen, office-managers, and private secretaries.

The School offers several separate courses, which are designated as follows:—Banking, Business Administration, Finance and Bond Salesmanship, Professional Accountancy, Normal Course, and Condensed Course in Accounting. The instruction is given by college teachers who are specialists in their subjects, and by practical men familiar, through their daily work, with the actual conditions in their several fields. Its students are mature men with considerable practical experience. Since the classes are conducted in the evening, men attending them are free to gain practical experience in business during the day. Thus the quality of a man's daily work is materially benefited by the instruction he is receiving, while the grade of his work at the School is much improved by his constant contact with actual conditions.

Just as medicine, law, and engineering, have called for their special technical schools, so business is demanding opportunities for thorough professional training in accountancy, commerce, and finance. Such training has hitherto been possible only in the business administration departments of the larger universities, the first of which was established by the University of Pennsylvania several years ago, followed

SCHOOL OF COMMERCE AND FINANCE

later by schools at Dartmouth, New York, Harvard, and several western state universities. The School of Commerce and Finance aims to develop men of finished training. In accordance with this aim it presents several features which distinguish it from most schools of its kind: the technical subjects included in its programmes are taught by specialists of wide practical experience; the students are required to do a large amount of practice work in connection with those subjects which require for their successful application a high degree of technical skill and facility; all practice work is critically examined and graded, and all low grade work has to be repeated.

Admission and Advancement Requirements

Any man eighteen years of age or over, of good character, regardless of his occupation or religious belief, may register for any of the regular courses offered in the School of Commerce and Finance. Such men may elect any subject or group of subjects provided their programmes do not conflict with the regular programmes of the school. Special programmes consisting of one or more subjects will be arranged upon application of ten or more petitioners.

A knowledge of elementary bookkeeping is required of all who register for any of the six regular courses. Those who do not possess this knowledge may acquire it by taking the course in Elementary Bookkeeping, two evenings per week (Monday and Friday), from August 5 to September 13. No charge is made for this course, but those desiring to take it are required to register for the first year, and to make the first payment prior to August 5.

An entrance examination in elementary bookkeeping will be held at 10 Ashburton Place, Boston, on September 16, 17, and 18 at 7 o'clock P.M. and may be taken on any one of these dates. Those presenting themselves for this examination should be familiar with the elementary principles of double entry bookkeeping. They should understand how to record simple transactions in books of original entry (such as the cash book, purchase book, sales book, and journal), how to post, take a trial balance, and close the ledger. They should also understand how to detect errors in a trial balance, how to reconcile a bank balance, and how to make out invoices, checks, notes, receipts, etc.

A knowledge of elementary bookkeeping is not required of special students who register in other than accounting subjects.

SCHOOL OF COMMERCE AND FINANCE

All written work, tests, and examinations, are graded according to the following system:—

D=1 to 70% (low and must be repeated.)

C=70 to 80% (passable)

B=80 to 90% (good)

A=90 to 100% (a mark of distinction)

Students are classified as follows:—

Candidates for the degree of B. C. S.

Candidates for the degree of M. C. S.

Special Students.

Candidates for the degree of B. C. S.

The degree of B. C. S. will be conferred upon any high school graduate who completes all of the subjects in any one of the regular three-year courses offered by the School of Commerce and Finance, and passes all the term work and examinations prescribed in the course with a grade of "C" or higher.

The degree of B. C. S. will also be conferred under certain conditions upon non-high school graduates of unusual ability and business experience who complete all the subjects in any one of the regular three-year courses offered by the School of Commerce and Finance, and pass all examinations prescribed in the course, provided seventy-five per cent of their term marks and fifty per cent of their examination marks are "B" or higher, and provided the remaining percentage of term and examination marks is not lower than "C".

The policy of the School of Commerce and Finance, with respect to its entrance requirements, is somewhat of a departure from the traditional custom owing to the fact that the courses are strictly vocational and, if preceded by a successful business experience, and taken by men of marked ability and actual business training, accomplish in the best and highest sense the objects of the school. But the achievement of the degree means three years of hard work, during which practically all social pleasures must be sacrificed for evening work, which will lead to increased power in the future.

ADMISSION AND ADVANCEMENT REQUIREMENTS

Candidates for the degree of M. C. S.

Regular candidates for the degree of Master of Commercial Science (M. C. S.) must hold the degree of Bachelor of Commercial Science from an approved school of Commerce and Finance. They are required to take a one-year graduate course, subject to the direction of the Faculty, and to pass examinations upon the subjects therein pursued. They are required to prepare, independently, a thesis which shall be approved by a vote of the Faculty before the degree is conferred.

Special Students

Those who are not candidates for the degree are known as special students. Under this head are classed those who enroll for the Condensed Accounting Course, and those who elect partial courses or special programmes.

Special students may later become candidates for a degree, in which case they will be credited with all work satisfactorily completed.

College Graduates

The excellent opportunities offered in the comparatively new field of professional accountancy, the demand for specially trained men for business administrative positions, and the opportunities in financial institutions open to properly qualified men, should be of interest to college graduates who contemplate business careers. The School of Commerce and Finance offers to such men an opportunity to acquire through its evening courses such practical knowledge as will be of greatest service to them.

Extension Classes

Extension classes for teachers will be conducted Saturday mornings and Thursday afternoons. Subjects included in the regular first and second year programmes of the Normal Course, except law, will probably be offered as extension work during the year 1912-13. Credits for advanced standing, together with credits for subjects satisfactorily completed, will count toward the degree.

SCHOOL OF COMMERCE AND FINANCE

Advanced Standing

Credit for advanced standing, based on such examinations as the Faculty may prescribe, may be given in any subject.

Examinations for advanced standing will be given on September 17, 18, and 19, at 7.30 p.m., at 10 Ashburton Place, Boston.

The School Year

The school year consists of 36 weeks. Each school week consists of seven and one-half hours of class study, with approximately nine and one-half hours of outside preparation.

Outside Preparation.

In order to secure satisfactory results it is necessary for students to devote the required time to outside preparation. The act of registering in the School of Commerce and Finance carries with it an implied agreement upon the part of the student that he will devote the necessary time to the preparation of his class work.

Reports of Standing

A report of the standing of every student is rendered at the close of each term, showing the term mark and examination mark in each subject taken during the term. In case a student's work is unsatisfactory he may be either required to repeat the subjects in which his work has been unsatisfactory, drop one or more subjects, or withdraw from the course.

Tuition Fees and Expenses

Tuition for any of the six regular courses is \$75 per year, payable as follows: \$25 at time of registration, \$25 November 15, and \$25 January 15. The expense for books and stationery varies considerably according to the course or group of subjects selected. It amounts to approximately \$15 per year.

Tuition fees for special students, including those who enroll for the Extension Classes, are based on the rate of \$12 per hour running through the year, or \$6 per hour running through a term.

The Dean will assist in procuring a position for those who require employment in Boston in order to be able to attend the School of Commerce and Finance. The Dean's office will also, when requested, assist students in finding desirable boarding places.

Courses of Instruction

Six courses of instruction are offered in the School of Commerce and Finance:

- Banking
- Business Administration
- Finance and Bond Salesmanship
- Professional Accountancy
- Normal Course
- Condensed Course in Accounting

The first five courses require three years to complete the work for the degree of B. C. S. The last one is a two-year course especially designed to assist those who wish to prepare for the state examination leading to the degree of Certified Public Accountant in the shortest time possible.

All courses offered by the School of Commerce and Finance are specially arranged with a view to affording students the most complete preparation possible for their chosen careers. Entire elective freedom is not permitted because it is believed that the members of the Faculty are in a better position than the students to know which subjects should be included in a given course in order to properly train men for the class of work contemplated by that course.

Candidates for the degree who are allowed credit for subjects satisfactorily completed at other institutions may substitute other subjects in place of those for which they are given credit. To this end they may elect, with the permission of the Dean, subjects from one or more courses other than the one in which they are enrolled.

Special students are permitted to elect any subject or group of subjects, from one or more courses, provided their programmes do not conflict with the regular programmes of the School.

The programme of Extension Courses to be given Saturday mornings and Thursday afternoons will be specially arranged to meet the requirements of those who desire to enroll.

Students of any of the degree granting courses, except

COURSES OF INSTRUCTION

the Normal Course, are permitted to transfer from one course to another at the close of the first year, as the first year courses parallel one another. Students of the Banking course may transfer to the Finance and Bond Salesmanship course, and *vice versa*, at the close of the second year.

A large amount of practice work is given in connection with most of the subjects, and great stress is placed upon precision as to form, arrangement, punctuation, capitalization, proper technique, clear expression, logical deduction, and general neatness. All work passed in is critically examined, graded and returned. Detailed records are kept of all graded work, and such records are used as a basis for determining the quality of students' term work. Tests are frequently given in subjects that do not require much practice work.

A reporter is present during class hours in such subjects as are presented through lectures, in order to provide verbatim copies of the lectures, thus permitting students to concentrate their minds on what is said and avoid note taking. Copies of the lectures are furnished to students at a nominal fee.

Banking Course

The course in banking offers a thorough training in the principles and present practices of modern banking. It is intended to give men sufficient breadth of view to enable them to assume responsible positions in banks, or private banking houses. It is not presumed that any course of study can provide a man with those two essential qualities, shrewdness and foresight, but the development of these qualities may be materially assisted through proper training in the sound principles of economics, law, accounting, finance, and investments. Men who receive such training have a distinct advantage over those who are not thus equipped.

On the following pages is given the programme of this course, arranged so as to show the class hours, the hours required for outside preparation, and the number of points allotted to each subject. The subjects are also arranged according to an hour plan.

This is a three year course leading to the degree.

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Programme in the Banking Course

	First Term		Second Term		Totals		Points
FIRST YEAR	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	
Technique of Accounts	5	5	2½	4½	135	171	17
Law	1½	1½	1½	1½	54	54	6
Principles of Economics	1	2	1	2	36	72	6
Elements of Auditing			2½	1½	45	27	4
Totals	7½	8½	7½	9½	270	324	33
SECOND YEAR							
Money and Banking	1½	2½			27	45	4
Corporation Finance			1½	2½	27	45	4
Law	1	2	1	2	36	72	6
Financial Statistics	2½	2½			45	45	5
Advanced Banking			2½	2½	45	45	5
Financial Markets	2½	2½			45	45	5
Commercial Resources			2½	3½	45	63	6
Totals	7½	9½	7½	10½	270	360	35
THIRD YEAR							
Law	1½	1½	1½	1½	54	54	6
Domestic and Foreign Exchanges			1½	1½	27	27	3
Investments	2½	3½	2½	3½	90	126	12
Commercial Paper	2½	2½			45	45	5
Banking and Underwriting			1	2	18	36	3
Bank Organ. and Admin.			1	1	18	18	2
Crises	1	1			18	18	2
Totals	7½	8½	7½	9½	270	324	33

NOTE: For a detailed explanation of the subjects mentioned above, see pages 38 to 52 of this catalogue.

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BANKING COURSE Hour Plan

	FIRST TERM			SECOND TERM		
FIRST YEAR	Tues.	Wed.	Fri.	Tues.	Wed.	Fri.
Technique of Accounts	7.00-9.30		7.00-9.30			7.00-9.30
Law		7.00-8.20			7.00-8.20	
Principles of Economics		8.30-9.30			8.30-9.30	
Elements of Auditing				7.00-9.30		
SECOND YEAR	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
Principles of Money and Banking						
Corporation Finance		7.00-8.20			7.00-8.20	
Law		8.30-9.30			8.30-9.30	
Financial Statistics	7.00-9.30			7.00-9.30		
Advanced Banking			7.00-9.30			7.00-9.30
Financial Markets						
Commercial Resources						
THIRD YEAR	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
Law			7.00-8.20			7.00-8.20
Domestic and Foreign Exchange						
Investments	7.00-9.30			7.00-8.20	7.00-9.30	
Commercial Paper		7.00-9.30				
Private Banking and Underwriting				8.30-9.30		
Bank Organization and Administration						
Cases			8.30-9.30			8.30-9.30

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Business Administration Course

The purpose of this course is to provide men who contemplate business careers, with a broad, practical, and modern preparation for their chosen work; and to enable men who are engaged in business to increase their capacity for administration.

There is a great demand in business for men who are capable of developing into specialists,—such as office managers, controllers, financial men, credit men, sales managers, publicity managers, buyers, etc. This course gives a man the proper foundation upon which to build the successful career of a specialist in that particular branch of business administration for which his business experience indicates that he is best fitted. It is not designed to develop a specialist in any one particular line, but rather to train an all-around business administrator who will readily “fit in” to a position, adjust himself to its peculiar needs, and overcome what would be to those with insufficient training unsurmountable obstacles. The finishing touches of a specialist in business administration must result from actual business experience, but the finishing touches can not precede the foundation. Experience alone is a slow and narrow builder of foundations, and in this age where the law of “the survival of the fittest” is so manifest, it behooves a man to recognize the importance, if not the absolute necessity, of securing proper technical preparation before he undertakes to sell his services in the open business market. The first question asked is “What can you do?”, and the age of apprenticeship is past. The man who takes this course is prepared to show what he can do, and his progress will be much more rapid than that of a person of equal business experience who has not had the same kind of training.

The programme as arranged on the following page is designed to give to each student in the course a knowledge of all of the subjects included therein. Those who desire to specialize in Buying, Publicity, Selling, or Commercial Credits, are permitted to elect additional work in any one of these subjects for the second term of their third year. This extra training, which is given on each Monday evening of the second term from 7 to 9.30, is designed to give those who desire to special-

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ize in any one of the four branches of business administration mentioned above, the opportunity to secure a very complete preparation for their chosen field of specialized work. Those who do not wish to specialize in any one of the four branches of business administration stated above, may elect to devote the time set aside for electives in the second term of the third year to carrying out under the direction of Dr. Dewing, special research into one or more phases of the particular line of business in which they are engaged or in which they desire to engage. Or they may elect Business English, and are advised to do so in case their knowledge of that subject is somewhat limited. Electives programmes must be arranged before the close of the second year and approved by the Dean.

This is a three-year course and leads to the degree.

Programme in the Business Administration Course

	First Term		Second Term		Totals		Points
FIRST YEAR	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	
Technique of Accounts	5	5	2½	4½	135	171	17
Law	1½	1½	1½	1½	54	54	6
Principles of Economics	1	2	1	2	36	72	6
Elements of Auditing			2½	1½	45	27	4
Totals	7½	8½	7½	9½	270	324	33
SECOND YEAR							
Elements of System Building	2½	2½			45	45	5
Elements of Cost Accounting	2½	1½			45	27	4
Money and Banking	1½	2½			27	45	4
Corporation Finance			1½	2½	27	45	4
Law	1	2	1	2	36	72	6
Commercial Resources			2½	3½	45	63	6
Buying			2½	1½	45	27	4
Totals	7½	8½	7½	9½	270	324	33
THIRD YEAR							
Law	1½	1½	1½	1½	54	54	6
Factory Organ. and Admin.	1½	1½			27	27	3
Office Organ. and Admin.			1	1	18	18	2
Publicity	2½	3½			45	63	6
Commercial Credits	1	2			18	36	3
Selling			2½	3½	45	63	6
Crises	1	1			18	18	2
Electives			2½	3½	45	63	6
Totals	7½	9½	7½	9½	270	342	34

NOTE: For a detailed explanation of the subjects mentioned above, see pages 38 to 52 of this catalogue.

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BUSINESS ADMINISTRATION COURSE Hour Plan

FIRST YEAR	FIRST TERM		SECOND TERM	
	Tues. 7.00-9.30	Wed. 7.00-8.20 8.30-9.30	Fri. 7.00-9.30	Tues. 7.00-9.30
Technique of Accounts				Fri. 7.00-9.30
Law				
Principles of Economics				
Elements of Auditing				7.00-9.30
SECOND YEAR				
	Mon. 7.00-9.30	Wed. 7.00-8.20 8.30-9.30	Fri. 7.00-9.30	Mon. 7.00-9.30
Elements of System Building				
Elements of Cost Accounting				
Principles of Money and Banking				
Corporation Finance				
Law				
Commercial Resources				
Buying				7.00-9.30
THIRD YEAR				
	Mon. 7.00-9.30	Wed. 7.00-8.20 8.30-9.30	Fri. 7.00-8.20	Mon. 7.00-9.30
Law				Fri. 7.00-8.20
Factory Organization and Administration				
Office Organization and Administration				
Publicity				
Selling				
Commercial Credits				
Crises				
Electives				7.00-9.30

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Finance and Bond Salesmanship Course

This course covers three years of practical training in the subjects prescribed, as shown in the programme on page 26. It is technical in character, and offers students careful preparation for financial work of all descriptions.

The course is intended for men who might come under one of four different captions, to all of whom it will be equally beneficial.

1. On account of the tendency of modern business toward the concentration of capital and business ability in large corporations, there has come into existence a class of men who make a careful study of the financial operations of these corporations. Especially is this true of the men who are employed by the private banking houses to investigate the financial conditions of a corporation with a view to underwriting its securities. Men who undertake these examinations are obliged to be familiar with corporation finance, and with the general demands on the part of the investing public.

2. Also, because of the tendency of investment to take the form of corporation securities, there has come into being during the last twenty or thirty years a relatively new class of business specialists, the bond salesmen. These men are interested in the placing of bonds with banking and insurance institutions and with the investing public. Such men require careful preparation not only in regard to the science of salesmanship, but also in regard to the principles of investment and finance. The opportunities in this new profession are exceedingly numerous as is evidenced by the fact that bond houses are compelled to employ untrained men to do the work which should be performed by trained specialists.

3. There is another class of men who require training as financial statisticians. These men occupy positions of trust in banks and private banking houses, in the office of accountants, with the various bureaus of the government, as financial editors of papers, and as writers of magazine articles.

4. A fourth class is made up of those who are called upon to supervise the investment of their own or trust funds. It is often that these men have had no previous training in corpora-

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tion finance and investments and find themselves totally unfit for their task. They are compelled, therefore, to rely upon the views of some lawyer who has not the time nor opportunity to specialize in financial subjects. This course offers an opportunity for such men to receive a careful training.

This is a three-year course leading to the degree.

Programme in the Finance and Bond Salesmanship Course

FIRST YEAR	First Term		Second Term		Totals		Points
	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	
Technique of Accounts	5	5	2 ¹ / ₂	4 ¹ / ₂	135	171	17
Law	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂	54	54	6
Principles of Economics	1	2	1	2	36	72	6
Elements of Auditing			2 ¹ / ₂	1 ¹ / ₂	45	27	4
Totals	7 ¹ / ₂	8 ¹ / ₂	7 ¹ / ₂	9 ¹ / ₂	270	324	33
SECOND YEAR							
Money and Banking	1 ¹ / ₂	2 ¹ / ₂			27	45	4
Corporation Finance			1 ¹ / ₂	2 ¹ / ₂	27	45	4
Law	1	2	1	2	36	72	6
Financial Statistics	2 ¹ / ₂	2 ¹ / ₂			45	45	5
Advanced Banking			2 ¹ / ₂	2 ¹ / ₂	45	45	5
Financial Markets	2 ¹ / ₂	2 ¹ / ₂			45	45	5
Commercial Resources			2 ¹ / ₂	3 ¹ / ₂	45	63	6
Totals	7 ¹ / ₂	9 ¹ / ₂	7 ¹ / ₂	10 ¹ / ₂	270	360	35
THIRD YEAR							
Law	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂	1 ¹ / ₂	54	54	6
Domestic and Foreign Exchange			1 ¹ / ₂	1 ¹ / ₂	27	27	3
Investments	2 ¹ / ₂	3 ¹ / ₂	2 ¹ / ₂	3 ¹ / ₂	99	126	12
Public Service Corporations	1 ¹ / ₂	1 ¹ / ₂			27	27	3
Corporate Reorganizations	1	2	1	2	36	72	6
Bond Salesmanship			1	1	18	18	2
Crises	1	1			18	18	2
Totals	7 ¹ / ₂	9 ¹ / ₂	7 ¹ / ₂	9 ¹ / ₂	270	342	34

NOTE: For a detailed explanation of the subjects mentioned above, see pages 38 to 52 of this catalogue.

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FINANCE AND BOND SALESMANSHIP COURSE

Hour Plan

	FIRST TERM			SECOND TERM		
FIRST YEAR	Tues.	Wed.	Fri.	Tues.	Wed.	Fri.
Technique of Accounts	7.00-9.30		7.00-9.30		7.00-8.20 8.30-9.30	7.00-9.30
Law		7.00-8.20 8.30-9.30				
Principles of Economics				7.00-9.30		
Elements of Auditing						
SECOND YEAR						
Principles of Money and Banking	Mon.	Wed. 7.00-8.20	Fri.	Mon.	Wed.	Fri.
Corporation Finance					7.00-8.20 8.30-9.30	
Law		8.30-9.30				
Financial Statistics	7.00-9.30		7.00-9.30			
Advanced Banking						
Financial Markets						
Commercial Resources			7.00-9.30			7.00-9.30
THIRD YEAR						
Law	Mon.	Wed.	Fri.	Mon.	Wed.	Fri.
Domestic and Foreign Exchange			7.00-8.20			7.00-8.20
Investments	7.00-9.30			7.00-8.20	7.00-9.30	
Public Service Corporations		7.00-8.20 8.30-9.30				
Corporate Reorganizations				8.30-9.30		
Bond Salesmanship			8.30-9.30			8.30-9.30
Crises						

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Normal Course

The aim of this course is to enable those who desire to teach commercial subjects in colleges, high schools, and private schools the opportunity of acquiring adequate preparation for such work.

There is a great demand for teachers of bookkeeping, economics, business English, business arithmetic, business law, etc., and the work is both pleasant and remunerative. High schools throughout the country are adding commercial subjects to their programmes; many of them are offering elaborate four-year commercial courses; and commercial high schools are not uncommon in our larger cities. The field of commercial teaching offers most attractive opportunities to those who are properly prepared. This course will prepare one to take entire charge of the commercial department of a high school or private school, or to teach in higher institutions. If one intends to prepare for college teaching, one may substitute more advanced accounting subjects, or applied economic subjects, for penmanship and business arithmetic.

It is very difficult for teachers of commercial subjects to acquire a practical knowledge of bookkeeping and business methods. Many commercial school text books on bookkeeping do not present the subject in conformity with the ideas of modern practitioners, or in accordance with modern business methods. Hence commercial teachers are very much handicapped in their work on account of antiquated, impractical, and unreliable text books. Unless their knowledge is far broader and much more up-to-date than the texts they use, they are unable to properly modify them so as to secure the best results.

Commercial teachers should possess a far more advanced knowledge of the subjects they intend to teach than that which they expect their students to acquire. To do this they must go beyond the covers of their text books and seek knowledge from those who have gained theirs by practical experience. A competent commercial teacher should be a specialist in his subjects. He should have a knowledge of modern bookkeeping practice and procedure, science of classification, business methods,

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elements of system building, elements of cost accounting, elements of auditing, business law, principles of economics, money and banking, corporation finance, commercial resources, business arithmetic, school-room organization and administration, principles of education, penmanship technique and methods, the advantages and weaknesses of different texts, the proper way of presenting the subject of elementary bookkeeping, how to teach intermediate and advanced bookkeeping, how to arrange schedules and programmes, etc. All instruction in this course is given by specialists.

This is a three-year course leading to the degree.

Programme in the Normal Course

FIRST YEAR	First Term		Second Term		Totals		Points
	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	
Technique of Accounts	5	5	2½	4½	135	171	17
Business English	1½	1½	1½	1½	54	54	6
Principles of Economics	1	2	1	2	36	72	6
Elements of Auditing			2½	1½	45	27	4
Totals	7½	8½	7½	9½	270	324	33
SECOND YEAR							
Elements of System Building	2½	2½			45	45	5
Elements of Cost Accounting	2½	1½			45	27	4
Money and Banking	1½	2½			27	45	4
Corporation Finance			1½	2½	27	45	4
Law	1	2	1	2	36	72	6
Commercial Resources			2½	3½	45	63	6
Business Arithmetic			2½	2½	45	45	5
Totals	7½	8½	7½	10½	270	342	34
THIRD YEAR							
Law	3	3	3	3	108	108	12
Penmanship	2½	2½	1	3	63	99	9
School Room Organ. & Admin.			1	2	18	36	3
Principles of Education			2½	1½	45	27	4
Practice in Teaching	2	3			36	54	5
Totals	7½	8½	7½	9½	270	324	33

NOTE: For a detailed explanation of the subjects mentioned above, see pages 38 to 52 of this catalogue.

NORMAL COURSE Hour Plan

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Professional Accountancy Course

Twenty years ago the profession of accountancy was practically unknown in America, save amongst the comparatively few business men who engaged auditors or so-called "expert accountants" to check up their books, detect errors in their trial balances, close their books, etc. The total number of men who devoted their entire time to public accounting in this country prior to the year 1890 cannot be definitely stated, but it probably did not exceed 100. At the present time there are about 5000 men who are engaged in professional accountancy work in the United States. The membership of the American Association of Public Accountants numbers 1093, practically all of whom are Certified Public Accountants.

New York was the first state in the Union to pass laws recognizing and regulating the accountancy profession. The New York State Legislature created an act in 1896 known as "An act to regulate the profession of public accountants." This act provides that any citizen of the United States residing or having a place for the regular transaction of business in the State, being over the age of twenty-one years and of good moral character, and who shall have received from the Regents of the University a certificate of his qualifications to practice as a public expert accountant, shall be styled and known as a certified public accountant; and no other person shall assume such title, or use the abbreviation C. P. A., or any other words, letters or figures, to indicate that the person using the same is such certified public accountant.

The Regents of the University made rules which provide for an examining board of three professional accountants, whose duty it shall be to prepare and conduct examinations at stated intervals, pass upon the professional requirements of candidates, etc. The full C. P. A. certificate is granted only to those at least twenty-five years of age who have had at least five years satisfactory experience in the study and practice of accountancy, and who possess a high school education or its equivalent.

Since the passage of the C. P. A. law by the New York State Legislature in 1896, other state legislatures have passed similar laws, so that now twenty-three states have C. P. A.

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laws for regulating the practice of professional accountancy.

In Italy, Scotland, England, and Ireland accountancy has been established and recognized as a profession for many years. The first movement for the organization of professional accountants began in Italy in 1581, in Scotland in 1853, and in England in 1870.

The duties of the professional accountant of today are varied and complex. He is called upon to make periodical examinations of the books and accounts of all classes of business and to report the results of his examination, so that those interested may ascertain from his report the true condition of affairs and the results from operations. He is called upon to make special investigations in behalf of interested capitalists, prospective investors, creditors, bankers, etc. In the case of consolidations he is called upon to examine into the affairs of each company which is a party to the proposed amalgamation in order to provide a proper basis for determining the value to be placed upon each business, its average earning capacity during a given number of years, etc. He is called upon to design and install accounting systems which will reduce to a minimum the possibilities of irregularities, and which will enable the management to ascertain what they want to know when they want to know it. The functions of the professional accountant in this age of complex business activities is becoming more and more varied. The requirements are very broad and exacting, calling for a high degree of technical skill, a familiarity with every phase of business organization and administration, a knowledge of business law, special training in matters of corporation finance, money, and banking, and finally the qualities of honesty, moral courage, breadth of vision and insight.

The demand for properly trained men for the accountancy profession greatly exceeds the supply. The profession is rapidly growing, and it offers excellent opportunities for those who are willing to equip themselves.

This course prepares men for the accountancy profession by providing broad practical training in those subjects that are essential to the proper preparation of a professional accountant. The technical instruction is given by professional accountants

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of wide experience. It fits students to pass the C. P. A. examinations, but that is a secondary feature. It is distinctly a professional course, having for its chief aim the best possible preparation for the accountancy profession, just as the chief aim of the Law School is to properly prepare its students for the legal profession.

Not all men who may enroll for this course are temperamentally fitted for the profession of accountancy, while others who take the course are better fitted to take positions as office managers, travelling auditors, chief accountant, etc. The Head of the accounting department will be glad to confer with students who show, after completing their first year, that they are better fitted for a business administrative position than for public practice, with a view to assisting them in making the wisest selection.

This is a three-year course leading to the degree.

Programme in the Professional Accountancy Course

	First Term		Second Term		Totals		Points
FIRST YEAR	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	
Technique of accounts	5	5	2½	4½	135	171	17
Law	1½	1½	1½	1½	54	54	6
Principles of Economics	1	2	1	2	36	72	6
Elements of Auditing			2½	1½	45	27	4
Totals	7½	8½	7½	9½	270	324	33
SECOND YEAR							
Elements of System Building . .	2½	2½			45	45	5
Elements of Cost Accounting . .	2½	1½			45	27	4
Advanced Cost Accounting . . .			2½	1½	45	27	4
Advanced System Building . . .			2½	3½	45	63	6
Money and Banking	1½	2½			27	45	4
Corporation Finance			1½	2½	27	45	4
Law	1	2	1	2	36	72	6
Totals	7½	8½	7½	9½	270	324	33
THIRD YEAR							
Law	1½	1½	1½	1½	54	54	6
Advanced Auditing	2½	3½			45	63	6
Public Service Accounting . . .			1½	2½	27	45	4
Factory Organ. and Admin. . .	1½	1½			27	27	3
Office Organ. and Admin.			1	1	18	18	2
Corporate Reorganizations . .	1	2	1	2	36	72	6
Advanced Accounting Problems			2½	2½	45	45	5
Special Lectures	1				18		1
Totals	7½	8½	7½	9½	270	324	33

NOTE: For a detailed explanation of the subjects mentioned above, see pages 38 to 52 of this catalogue.

PROFESSIONAL ACCOUNTANCY COURSE
Hour Plan

	FIRST TERM		SECOND TERM	
FIRST YEAR	Tues.	Wed.	Tues.	Fri.
Technique of Accounts	7,00-9,30			7,00-9,30
Law		7,00-8,20	7,00-8,20	
Principles of Economics		8,30-9,30	8,30-9,30	
Elements of Auditing			7,00-9,30	
SECOND YEAR				
Elements of System Building	Mon.			Fri.
Elements of Cost Accounting	7,00-9,30			
Advanced System Building		Wed.	Mon.	
Principles of Money and Banking				7,00-9,30
Corporation Finance		7,00-8,20	7,00-9,30	
Law		8,30-9,30	7,00-8,20	
			8,30-9,30	
THIRD YEAR				
Law	Mon.			Fri.
Advanced Auditing	7,00-9,30	Wed.	Mon.	7,00-8,20
Public Service Corporation Accounting			7,00-8,20	
Factory Organ. and Admin.		7,00-8,20	7,00-8,20	
Office Organization and Administration		8,30-9,30	8,30-9,30	
Corporate Reorganizations				8,30-9,30
Advanced Accounting Problems				
Special Lectures			8,30-9,30	7,00-9,30

COURSES OF INSTRUCTION

Condensed Course in Accounting

This is a special two-year course, and does not lead to the degree. It is designed for those who wish to prepare for the C. P. A. examination in the briefest time possible.

Those who are now engaged, or who contemplate engaging, in professional accounting, and who desire to attend this School, are earnestly urged to take the regular three-year Professional Accountancy Course rather than this special two-year course, because the former affords a much broader and more complete preparation, and also because the degree from this School is well worth the additional year necessary to its acquisition.

COPY OF MASSACHUSETTS C. P. A. LAW

(Chapter 399, Acts of 1909, as Amended by Chapter 81, Acts of 1911)

AN ACT TO PROVIDE FOR THE REGISTRATION OF PUBLIC ACCOUNTANTS

Be it enacted, etc., as follows:

Section 1. The bank commissioner shall have charge of the registration of public accountants, shall make such rules as are necessary to carry out the provisions of this act, and shall keep a record of all certificates issued hereunder, a duplicate of which shall be open to inspection in the office of the Secretary of the Commonwealth.

Section 2. The said commissioner shall examine any citizens of the United States resident in the commonwealth and not less than twenty-one years of age, who may apply for such a certificate, shall investigate his character and fitness and shall require the payment of such a reasonable and fixed fee, not exceeding twenty-five dollars, as may be necessary in his opinion to carry out the provisions of this act.

Section 3. Any applicant whom said commissioner deems to have the necessary qualifications and professional ability shall be registered as a public accountant, and shall receive a certificate thereof, good for one year from its date. Said certificate may be renewed from year to year upon the payment of five dollars for each renewal. Said commissioner shall have power, after notice and hearing, to suspend or revoke for good cause any certificate issued by him.

Section 4. Any person who falsely represents himself to be a public accountant registered under the provisions of this act, shall be deemed guilty of a misdemeanor, and shall be punished by a fine not exceeding five hundred dollars, or by imprisonment for a term not exceeding six months, or by both such fine and imprisonment.

Section 5. This act shall take effect on the first day of October in the year nineteen hundred and nine.

(Approved May 17, 1909)

(Chapter 263, Acts of 1910)

AN ACT RELATIVE TO PUBLIC ACCOUNTANTS

Be it enacted, etc., as follows:

Section 1. Public accountants who have been or may be registered under the provisions of Chapter three hundred and ninety-nine of the acts of the

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year nineteen hundred and nine shall be entitled to style themselves "Certified Public Accountants."

Section 2. The fees received from applicants for registration as public accountants shall be used, so far as may be needful, for the payment of expenses incurred in carrying out the provisions of said chapter three hundred and ninety-nine.

Section 3. This act shall take effect upon its passage.

(Approved March 22, 1910)

Programme in the Condensed Course in Accounting

	First Term		Second Term		Totals		Points
	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	Class hrs.	Out-side hrs.	
FIRST YEAR							
Technique of Accounts	5	5	2½	4½	135	171	17
Law	1½	1½	1½	1½	54	54	6
Elements of Auditing			2½	1½	45	27	4
Elements of Cost Accounting			1	2	18	36	3
Totals	6½	6½	7½	9½	252	288	30
SECOND YEAR							
Elements of System Building	2½	2½			45	45	5
Advanced Cost Accounting			2½	1½	45	27	4
Advanced System Building			2½	3½	45	63	6
Advanced Auditing	1½	1½	1½	1½	54	54	6
Law	2	4	1	2	54	108	9
Totals	6	8	7½	8½	243	297	30

NOTE: For a detailed explanation of the subjects mentioned above, see pages 38 to 52 of this catalogue.

CONDENSED COURSE IN ACCOUNTING Hour Plan

FIRST YEAR	FIRST TERM		SECOND TERM	
	Tues.	Fri.	Tues.	Fri.
Technique of Accounts	7.00-9.30	7.00-9.30	Wed.	7.00-9.30
Law				
Elements of Auditing			7.00-8.20	
Elements of Cost Accounting			8.30-9.30	
SECOND YEAR				
Elements of System Building	Mon.	Fri.	Mon.	Fri.
Advanced Cost Accounting	7.00-9.30			
Advanced System Building			7.00-9.30	
Advanced Auditing				
Law			7.00-8.20	
			8.30-9.30	
			8.30-9.30	

Description of Subjects

Department of Accountancy

Technique of Accounts

Required in the first year in all regular courses; two evenings each week of the first term and one evening each week of the second term.

Thorough training is given in the science of classification, bookkeeping technique, and the form and arrangement of financial statements. Students are required to write up several sets of books, beginning with a wholesale mercantile set, and following with three manufacturing sets, and a complete banking set. A great variety of practice work is given in making adjusting entries, closing entries, balance sheets, profit and loss statements, statement of affairs, deficiency accounts, realization and liquidation accounts, and special financial statistics. Lectures are frequently given bearing upon the theory of accounts, bookkeeping practice and procedure, and the form and arrangement of financial statements.

All written work is critically examined, graded, and returned to students. All work with a mark of "D" is required to be repeated.

The following texts are prescribed in this course:—

"Science of Accounts" by H. C. Bentley.

"Practice Exercises" by H. C. Bentley.

"Practical Accounting" by W. H. Dennis.

(Consisting of the sets used in teaching practical accounting at the New York University School of Commerce, Accounts, and Finance.)

"National Banking Set" by H. M. Rowe.

References:—

"Modern Accounting" by H. R. Hatfield.

"Advanced Accounting" by L. R. Dicksee.

"Accounting in Theory and Practice" by G. R. Lisle.

"Bookkeeping and Accounting" by Spicer and Pegler.

"The Philosophy of Accounts" by C. E. Sprague.

"Accounts, their Construction and Interpretation" by W. M. Cole.

"Estate Accounting" by Bangh and Schmeisser.

"History of Accounting" by Richard Brown.

"Business Education and Accounting" by C. W. Haskins.

The financial reports of various industrial corporations are furnished to students, and used in teaching the form and arrangement of financial statements, and in illustrating the desirable and undesirable features embodied in published financial reports.

Elements of Auditing

Required in the first year in all regular courses; one evening each week during the second term.

The elementary principles of auditing in theory and practice are taught by means of lectures, assigned reading, and illustrations. Excellent practice work is provided by having each student audit a mercantile set of books, in conformity with a detailed programme dictated and explained by the instructor. All working papers are required to be made in proper form, and an audit report covering the examination is prepared in accordance with the form and arrangement illustrated by model audit reports furnished to the students.

DESCRIPTION OF SUBJECTS

The entire time set aside for this subject is devoted to mercantile and manufacturing audits, so that all students taking regular courses are given thorough training in the principles of auditing as applied to the greatest number of businesses.

The basis of this course is "Elements of Auditing" by H. C. Bentley.

Elements of System Building

Required in the second year in all regular courses except Banking, and Finance and Bond Salesmanship, one evening each week during the first term.

This subject treats of the fundamental principles of system building as applied to all classes of business. The students are first taught the science and art of rulings. Lectures are given bearing upon the proper methods of handling and recording cash receipts and disbursements, purchases, sales, returns, etc. They are then required to design, from specifications furnished, several complete accounting systems including all forms used in connection therewith; e. g., retail lumber business, publishing business, small manufacturing business, instalment furniture business, (the first and last two systems providing for monthly profits). In connection with each system they are required to write a complete set of instructions for the conduct of the system—including a detailed description of the functions of each book and form, and each ledger account employed in the general ledger. Lectures are given on the standard size and grades of ledger papers, the different kinds of bindings, and the way in which to frame specifications for book making and form printing. Loose leaf binders and card systems are exhibited and explained, and their advantages and weak points are brought out in the discussions.

Elements of Cost Accounting

Required in the second term of the first year in the Condensed Course in Accounting, one half evening each week, and in the first term of the second year in the Professional Accountancy Course, one evening each week.

The description following covers the subject as given to the students of the Professional Accountancy Course. The work given to the students of the Condensed Accounting Course has to be abridged very considerably.

A series of lectures will be given on the mathematics of cost accounting, the object being to teach students how to solve the more complex mathematical problems involved in modern accounting; e. g., the use of logarithm tables in amortizing sinking funds, bond premiums, depreciation reserves, etc.; comparison of true discount, bank discount, and accurate interest; how to compute electric power consumption; how to compute horse power consumption; how to determine air consumption; how to exhibit comparative statistics by means of graphic diagrams; how to compute the number of square feet contained in a surface the sides of which are irregular; and various other problems which the accountant is called upon to solve from time to time.

The fundamental principles of cost accounting are taught by means of lectures and illustrations. The three elements of production cost are treated in relation to the "shop order" and "process" methods. Lectures are given in which costing and factory term are defined and the different methods of distributing "over head" expenses explained and illustrated.

Students are required to design from specifications furnished a complete cost system of a moderately simple type, and to write a set of instructions for its conduct.

References:—

"Factory Costs" by F. E. Webner.

"Production Factors" by A. H. Church.

"The Proper Distribution of Expense Burden" by A. H. Church.

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Advanced Cost Accounting

Required in the second term of the second year in the Professional Accountancy Course and in the Condensed Course in Accounting, one evening each week.

A series of lectures on production methods, with special reference to cost accounting, will be given by a mechanical engineer of broad experience who has made a special study of cost accounting with a view to determining the most practicable methods in distributing "burden" or "overhead" expenses. The more technical phases of cost finding will be treated in these lectures, and emphasis will be placed upon the importance of designing cost systems which meet the requirements of a business rather than burden the administration with fanciful theories which either conflict with the operations of the business or result in a failure when put to the test of practical application.

Students taking this subject will be required to design two complete cost systems from specifications furnished, and to write a set of instructions for the conduct of each system.

Lectures will be given by two professional accountants who are specialists in cost accounting, and by one cost accountant who is in charge of the accounting department of a large manufacturing business.

The basis of this course will be "Factory Costs," by Webner, "Production Factors," by Church and "Expense Burden" by Church.

References:

"Complete Cost-Keeper," by H. L. Arnold.

"Depreciation and Wasting Assets," by P. D. Leake.

"Silk Mill Costs," by C. M. Day.

Advanced System Building

Required in the second term of the second year in the Professional Accountancy Course and in the Condensed Course in Accounting; one evening each week.

This course is a logical continuation of the Elements of System Building, and consists almost entirely of practice work. Several intricate accounting systems, each one representing a different kind of business, are designed by the students. The technique of these businesses is fully explained, and the student is provided in each case with the information that would be ordinarily required by an accountant if called upon to design an accounting system for a business with which he is not familiar. From this information, and from the result of the student's individual research, he is required to prepare a set of instructions for the conduct of each system designed. Students are requested to do this work independently, but they may discuss any matters relating thereto with the instructor or with committees appointed by the instructor.

Special lectures will be given by practitioners who have specialized in system building for hotels, department stores, municipalities, real estate development companies, and insurance companies.

Advanced Auditing

Required throughout the second year in the Condensed Course in Accounting one half evening each week, and in the first term of the third year in the Professional Accountancy Course, one evening each week.

All lectures in advanced auditing will be given by professional accountants of broad experience. Special lectures will be given on examinations of savings banks, trust companies, co-operative banks, national banks, life insurance companies, and stockbrokers' accounts.

Several Lectures will be given on special investigations.

Thorough training will be given in the technique of audit reports, and students will be given practice in writing audit reports and in preparing audit programmes.

DESCRIPTION OF SUBJECTS

Each student is required to audit a complete manufacturing set of books and render an audit report showing the results of his examination. Such work is critically examined, marked, and returned by the instructor, in order that defects may be corrected.

The text book prescribed is Dicksee's "Auditing."

References:

"Modern Accounting," by H. R. Hatfield.

"Accounting Practice," by C. M. Day.

"Practical Auditing," by G. R. Renn.

"Year Book of the American Association of Public Accountants."

(1908, 1909 and 1910)

Public Service Corporation Accounting

Lectures in this subject will be given by accountants who have specialized in the accounting of public service corporations. A series of lectures and quizzes will be conducted on the following topics: Electrical Corporation Accounting, Gas Corporation Accounting, Street and Electric Railway Corporation Accounting, Water Corporation Accounting, Telephone Corporation Accounting, and Steam Railroad Corporation Accounting.

References:

"Uniform System of Accounts for Electrical Corporations."

"Uniform System of Accounts for Gas Corporations"

"Uniform System of Accounts for Street and Electric Railways."

New York Public Service Commission

"Standard Classification of Construction and Operating Accounts for Electric Light and Power Companies."

National Electric Light Association.

"Uniform System of Accounts for Gas Companies."

American Gas Institute.

Miscellaneous Bulletins on Railroad Accounting.

Interstate Commerce Commission.

Standard Telephone Accounts.

American Telephone and Telegraph Company.

Special Lectures on Accounting

During the first term of the third year special lectures will be given on the following topics:

Accounts of Hospitals and Charitable Institutions.

Accounts of Libraries.

Accounts of Clubs and Social Organizations.

Executors and Trustees' Accounts.

Receivers' Accounts.

The Administration of an Accountant's Office.

Advanced Accounting Problems

The entire time allotted to this subject, except the last three evenings of class work, will be devoted to solving various C. P. A. examination questions included in the text book prescribed, "Accountancy Problems," by Leo Greindlinger.

The last three evenings allotted to this subject will be given up to oral quizzes by Mr. F. R. Carnegie Steele, F.C.A., C.P.A., Chairman of the Executive Committee of the School of Commerce and Finance.

Factory Organization and Administration

Required in the Business Administration Course and the Professional Accountancy Course during the first term of the third year, one-half evening each week.

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This subject is treated in lectures by men of wide experience in factory organization and administration. The lectures will deal particularly with production methods in their relation to cost accounting, and with the general administration of a manufacturing plant. The methods of handling raw materials from the time they are received until they are used, the methods of handling production requisitions, time records, standing shop orders, etc., will be fully dealt with; and the different wage systems will be discussed. The production methods of several manufacturing businesses will be fully explained.

References:

"Factory Organization and Administration," by Hugo Diemer.

"Principles of Industrial Engineering," by C. B. Goings.

"Principles of Scientific Management," by F. W. Taylor.

"The Twelve Principles of Efficiency," by Harrington Emerson.

"Shop Management," by F. W. Taylor.

Office Organization and Administration

This subject is presented in lectures and exhibits, and is designed to teach modern office methods, the uses of office appliances and mechanical labor-saving devices, the fitting up of business offices, the arrangement of office equipment with a view to securing a maximum of efficiency with a minimum of space, and the organization and administration of an office staff. Various adding machines, billing machines, filing systems, card systems, loose-leaf binders, etc., will be exhibited, demonstrated and discussed. The departmentizing of clerical work will be explained, and the proper methods for developing an efficient internal check on all clerical work will be discussed.

Students will be given practice in planning offices of different sizes to meet special requirements.

Department of Business Law

Business Law is required in the following courses throughout the three years, one half evening each week:

Banking, Business Administration, Finance and Bond Salesmanship, and Professional Accountancy.

Students of the Normal Course do not take this subject during the first year. They are required to take second-year law and third-year law with the students of the four courses stated above. They are required to take first-year law in the third year in addition to third-year law.

Students of the Condensed Course in Accounting are required to take first-year and second-year law with the students of the four courses stated above. Third-year law is given in abridged form to the students of this course, on each Friday evening of the first term of the second year.

FIRST YEAR COURSE

Contracts (12 lectures)

All the main topics are treated, including among others: how contracts arise; who may be parties and who are not bound under contracts; the various kinds of considerations; contracts that are void for illegality, fraud, or other reasons; effects of various kinds of contracts; written and verbal contracts and the law of evidence as applied thereto; how contracts are construed; the Statute of Frauds and what contracts are void under that statute; how parties may terminate contracts and what events terminate them without any act of the parties; when specific performance of contracts may be enforced; actions for damages for breach of contracts and what damages may be obtained.

DESCRIPTION OF SUBJECTS

Agency (6 lectures)

Under agency will be treated how an agency may arise; agencies by contract, ratification, or estoppel; who may be agents, and who may be principals; how an agency may be terminated; what agencies can, and what agencies cannot be revoked; obligations of the principal and agent to one another; liabilities of principals on contracts made by and for torts committed by agents; liabilities of agents to third persons; responsibility of master for injury by his servant, and to his servant; new Workmen's Compensation Act; also special kinds of agents, such as auctioneers, factors, real estate and other brokers.

Carriers (Including Public Service Corporations and Bills of Lading) (6 lectures)

This part of the subject includes public obligations of common carriers, and public service corporations, especially as to discrimination and rates; regulation and control; carriers' liability to consigner and consignee,—(1) as insurer, (2) as warehouseman and termination of the same; limitation of carrier's liability by contract; rights and obligations of the parties to bill of lading, both "straight" and "negotiable," and their indorsees, at common law and under the Uniform Bill of Lading Act; connecting carriers; carriers' lien; interstate Commerce Act.

Personal Property (Including Sales, Mortgages, Pledges, Bailments, Liens, Warehouse Receipts) (12 lectures)

The main topics under personal property are sale of personal property; contracts and memoranda of sales; immediate and future sales; sale of property to be manufactured; when sales may be set aside; selection of goods, fixing of price, time of delivery; shipments of goods and rights and duties of consignor, consignee and carrier; bills of lading and stoppage and loss in transit; warranties of goods, sales by sample, by description, C. O. D., sales as approved, etc.; mortgages of personal property, including mortgages of household goods, mortgages of after acquired property, methods of foreclosure, etc.; pledges and miscellaneous bailments, including the responsibility of persons having control of property; liens on all kinds of personal property, except mechanics liens; and warehouse receipts.

SECOND YEAR COURSE

Corporations (Including Corporation, Taxation and Stock Transfers) (9 lectures)

Under this topic will be treated the various kinds of corporations; formation of corporations; charter, by-laws, capital stock; stockholders' and directors' meetings; election of officers; corporate bonds and mortgages and commercial paper; rights of minority stockholders; voting trusts; corporate books; rights of creditors; directors' and stockholders' liability; revocation of charter; dissolution of corporation; also federal and state taxation of corporations; and the law relating to transfers of stock.

Partnership (Including Voluntary Associations, Clubs, etc.) (6 lectures)

The following synopsis indicates the scope of these lectures:

Sharing of profits and losses, firm name and books of accounts; rights of partners as to management; rights of creditors against firm and partners; ownership of firm property; silent and dormant partners; commercial paper of firm; accounting by partners; contributions of capital, and loans to the firm; termination of firm, death, insanity, fraud or withdrawal of partner; liquidation of assets; bankruptcy of firm; limited partnerships; also the law relating to all kinds of voluntary associations, including that form known as the Massachu-

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setts Trust; liabilities arising out of transactions of clubs and other unincorporated associations, etc.

Negotiable Instruments (Including Bills, Notes, Checks, Bonds, Interest and the law of Suretyship) (9 lectures)

The lectures allotted to this topic will cover negotiable or commercial paper; what are valid negotiable instruments, and what instruments are not negotiable; forms of bills, notes, drafts and checks; makers, payees, endorsers, etc., of negotiable paper; acceptance of drafts and certification of checks; suits on negotiable paper; defenses to such suits; usury, forgery, theft, raising, illegal debts, alterations, infancy, prior payment, etc.; partnership and corporation paper; demand paper and bearer instruments; indorsers and when they are discharged; accommodation indorsers and indorsers after maturity; rights of indorsers paying paper; holders for value and in due course; presentment for payment, notice of dishonor, notice of protest, etc.; certificates of deposit; bonds, coupon and registered; certificates of stock; bills of lading, warehouses receipts, etc.

In connection with negotiable instruments will be treated the subject of bonds and suretyship generally, as applied to all kinds of contracts; how the obligation known as suretyship arises; how it is affected by contract; how it is enforced; and how it is discharged; also the law relating to interest, legal rates, usury, etc.

Real Estate and Probate Law

This course comprises twenty-four lectures, given partly in the second year and partly in the third. It deals with several distinct topics.

1st half (12 lectures)

(a) How Real Estate is handled: the rights, liabilities and duties of real estate brokers; agreements for the purchase and sale of real estate.

(b) Ownership, Occupation and Transfer of Real Estate: how real estate is acquired and the nature of titles and estates therein (title in fee, dower, courtesy, etc.) The incidents of ownership, easements, rights against adjoining owners, etc.; how real estate is transferred, (deeds of conveyance, rights and liabilities of joint owners), recording of deeds, examination of titles, etc.

(c) Landlord and Tenant: leases, oral and written; liability for rent; liability of landlord and tenant to third persons and vice versa; termination of tenancies, ejection of tenants, etc.

(d) Mortgages: nature of mortgages; how they are created; assignment, discharge, foreclosure, etc.

(e) Probate Law: rights of inheritance; rights of husband and wife; administration of estates; wills; appointment of executors and administrators; settling of estates generally; trusts and trustees; guardians, etc.

THIRD YEAR COURSE

Real Estate and Probate Law

(Continued 2nd half) (12 lectures)

See announcement in preceding paragraph

Insurance (Including Fire, Life, Accident, Marine Insurance, etc.) (6 lectures)

In this course will be treated the various kinds of insurance; nature of insurance; insurable interest; steps necessary to protect the insured, etc.

DESCRIPTION OF SUBJECTS

Bankruptcy and Business Credit. (Including Bankruptcy and Insolvency Assignments for Benefit of Creditors, Receiverships, Credit Representations, Statutes of Limitation, and the means of Collecting Debts.) (9 lectures)

Under this caption will be treated bankruptcy and insolvency under state and federal statutes; the United States Bankruptcy Act; assignments for benefit of creditors, and fraudulent assignments generally; receiverships of all kinds, how appointed and effect of appointment; representations as to credit, mercantile representations; mercantile reports; when debts become barred by the statute of limitations; machinery of courts for collecting bills; poor debtor process; Dubuque process, etc.

Special Topics. (Including Patents, Trademarks, Copyrights, Trade Names, Shipping Laws, Persons, Taxation, etc.) (9 lectures)

In this series of lectures will be treated a variety of special topics, not covered by the preceding topics, and not broad enough to call for special topic headings.

Department of Economics

Principles of Economics

Required throughout the first year in all regular courses, except in the Condensed Course in Accounting; one half evening each week.

This subject introduces students to the principles of economic theory and their practical applications to modern industrial and business problems. The first portion of the work deals with the principles of production, and discusses the place of labor, capital, and business ability in the organization of industry. Later the shares which each of these factors receives—wages, interest, and profits—are discussed in some detail, and an attempt is made to formulate general principles. Following this introduction there is a brief survey of modern economic problems involving such subjects as value, demand and supply, competition, combination, and general social theory. The course is introductory to Money and Banking given in the second year.

The text-book is Taussig's "Principles of Economics." Reading is prescribed in reference books.

Money and Banking

Required in the first term of the second year in all regular courses except in the Condensed Accounting Course; one half evening each week.

This subject is a continuation of Principles of Economics given in the first year. It has special reference to monetary problems. After a brief survey of the fundamental principles of money, the lectures treat of the various national monetary theories and their historical settings, and of the various theories of the relation between money and prices. In the latter part of the work, lectures are given on the national and state banking systems, with a brief survey of the banking systems of England, France and Germany. The course is introductory in character, and does not attempt to enter into the details of the routine work of a modern bank.

Taussig's "Principles of Economics," and Dunbar's "Money and Banking," are used as text-books.

Corporation Finance

Required in the second term of the second year in all regular courses, except in the Condensed Accounting Course; one half evening each week.

SCHOOL OF COMMERCE AND FINANCE

This subject treats of the problems in finance that have arisen in connection with the corporate form of business organization. It begins with a brief historical survey of the modern corporation, especially the tendencies that have created it. It discusses in detail promotion, syndicate underwriting, methods of financing, the sale of securities, the dividend policy of corporations, and the object and methods of reorganization. The course touches briefly on the differences between railroad, industrial and banking corporations, with special reference to different types of securities; it emphasizes the economic and business, rather than the legal, aspects of corporations.

Meade's "Corporation Finance" is used as a basis; but the greater part of the work consists in the preparation of special reports.

Financial Statistics

Prescribed for students in the courses in Banking, and Finance and Bond Salesmanship, in the first term of the second year—one evening each week.

This subject introduces the student to statistical methods. The lectures discuss the sources of financial statistics, the relative values of different authorities, and the methods of making use of financial documents. Various methods of combining statistics are discussed in detail, and the use of charts and diagrams is constantly emphasized. The outside work consists in the solution of practical problems, such as computations of railroad earnings through a period of years, of operating ratios, and of depreciation in various enterprises. A great deal of work is done in the preparation of charts to illustrate the results of the statistical work. This course is fundamental to work in finance.

There is no text book. Students are referred as much as possible to original sources.

Financial Markets

Prescribed for students in the courses in Banking, and Finance and Bond Salesmanship, in the first term of the second year; one evening each week.

This subject is a technical treatment of the functions of the various exchanges with special reference to the New York Stock Exchange. The course runs parallel to the course in Financial Statistics.

There is no text-book; but frequent reports are required.

Advanced Banking

Prescribed for students in the courses in Banking, and Finance and Bond Salesmanship, in the second term of the second year—one evening each week.

This subject treats of the differences between the various banking institutions in this country, the relation between banks in reserve cities and other banks, and the relation between the New York money market and financial institutions elsewhere in the country. Most of the time is devoted to discussions on the conditions that determine the rates of interest.

The course is somewhat technical in character, although it touches but slightly on the routine work of a bank.

Commercial Resources

Prescribed for students in the Banking, Business Administration, Finance and Bond Salesmanship and Normal courses, in the second term of the second year; one evening each week.

This subject begins with a preliminary survey of the economic resources of the United States. The greater part of the time is taken up with a detailed survey of some of the most important industries in this country, with an outline of their organization, geographical distribution, and the methods of distributing their products.

DESCRIPTION OF SUBJECTS

No text-book is required; but reading is prescribed in a number of reference books, and students will prepare maps and charts.

Investments

Prescribed for students in the courses in Banking, and Finance and Bond Salesmanship, in both terms of the third year; one evening each week.

This subject presents an exhaustive treatise of different forms of securities from the point of view of investment. It discusses at length the various elements in the return of investments: pure interest, risk and profits through wise judgment. It gives an outline of all the forms of securities likely to be considered by the individual, bank, or trustee. A greater part of the time allotted to the subject is devoted to an examination of special forms of investment with a view to determining their desirability for special kinds of funds. The work affords a chance for advanced and exhaustive research into the analysis of security values. Students will be required to assume the position of the banker and write a bond circular, and also the position of the investor, criticising the form and material embodied in circulars written by other members of the class.

Domestic and Foreign Exchange

Prescribed for students in the courses in Banking, and Finance and Bond Salesmanship, in the second term of the third year; one half evening each week.

This subject gives a summary of the ordinary routine work of domestic exchange, and a detailed outline of both the theory and practice of foreign exchange. It discusses the economic laws that influence the rate of exchange, and part of the time is taken up by explaining the routine practices of foreign exchange houses.

Public Service Corporations

Prescribed for students in Finance and Bond Salesmanship, in the first term of the third year; one half evening each week.

This subject is devoted especially to railroad, lighting, and traction corporations. It treats of the importance of the railroads in the industry of the country, giving an outline of some of the more important decisions of the Interstate Commerce Commission, and their effect on railroad values and securities. It gives an outline of methods of rate making for both railroad and other public service corporations that have already been determined by law. The purpose of the course throughout is to emphasize the financial, rather than the legal or engineering, aspects of public service corporations.

Ripley's "Railway Problems" is used as a text-book.

Crises

Prescribed for students in the courses in Banking, Business Administration, and Finance and Bond Salesmanship, in the first term of the third year—one half evening each week.

The course gives a general summary of the conditions which lead to and affect commercial crises and periods of depression. It discusses the usual influence of the money market, railroad earnings, business failures, and similar factors.

Corporate Reorganizations

Prescribed for students in the courses in Finance and Bond Salesmanship, and Professional Accountancy, in both terms of the third year; one half evening each week.

This subject treats of the conditions which have led to the embarrassment or failure of large industrial corporations, and the methods pursued in their reorganization. The course is somewhat technical in character. Lectures are

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given on important industrial reorganizations: for example, The Westinghouse Electric and Manufacturing Company, The Corn Products Company, The National Cordage Company, The General Asphalt Company, The Distillers' Securities Company, The American Malting Company, etc.

Bond Salesmanship

Prescribed for students in the Finance and Bond Salesmanship Course in the second term of the third year; one half evening each week.

This subject is intended to introduce the student to the practical work of a bond salesman. Lectures are given by men who are familiar with the needs of the bond salesman and methods by which he can achieve the best results. The purpose in view is to train men in an intelligent understanding of their business rather than to enable them to sell bonds without reference to specific conditions.

Commercial Paper

Required in the Banking Course during the first term of the third year; one evening each week.

This course will consider Commercial Paper from the standpoint of the banker who invests in commercial paper, and from the standpoint of the note broker who places the paper. Credit methods of bankers and note brokers will be discussed in detail. The mechanism of marketing paper by the broker will be explained.

Bank Organization and Administration

Required in the Banking Course during the second term of the third year; one half evening each week.

This subject is presented in a series of lectures by prominent banking men of Boston, in which the routine administration of national banks, trust companies, savings banks and co-operative banks, is dealt with fully. The following features will be treated from a technical standpoint: the organization and functions of national banks; the organization and functions of trust companies; the organization and functions of savings banks; the organization and functions of co-operative banks; the duties of directors, committees and officers; the functions of the different departments in each of the four classes of corporations mentioned above; organization and duties of the clerical force; methods of accounting as applied to the four classes of corporations stated above; the handling of depositors' accounts; clearing methods and the operations of the clearing house; and such other matters as the lecturers may deem it advisable to cover in their lectures.

References:

"The Modern Trust Company," by Kirkbride and Sterrett.

"The Modern Bank," by A. K. Fiske.

"Methods and Machinery of Practical Banking," by C. B. Patten.

"The National Bank Act."

"Instructions of the Comptroller of Currency relative to the Organization of National Banks."

Statutes relating to Trust Companies, Savings Banks and Co-operative Banks (three volumes), from the Office of the Bank Commissioner of the Commonwealth of Massachusetts.

Private Banking and Underwriting

Required in the Finance and Bond Salesmanship Course during the second term of the third year, one half evening each week.

The course takes up in some detail the ordinary operations of a private

DESCRIPTION OF SUBJECTS

banking house. Most of the time is devoted to an examination of the functions of an underwriting syndicate and its methods of procedure. Special underwriting agreements are studied in detail. The course is supplemental to the one on Bond Salesmanship.

Special Subjects Required In the Normal Course

Business Arithmetic

Required in the Normal Course during the second term of the second year; one evening each week.

In this subject will be treated in the first place the technique of computation. To this end there will be given systematic and persistent drill in the ordinary processes of arithmetic. By such drill there is secured that automatic reaction to number relations which is the basis of all rapidity and accuracy. In addition, the student must learn to correlate his technique with the needs of the world about him. This correlation will be taught by studies of the use of arithmetic in the important business organizations of the city.

Beyond this, as prospective teacher, the student will discuss the aims of business arithmetic, and the methods best suited to secure the results sought. He will also consider the question of material available for class use. Text books will be compared and criticised; and the student will be shown how to supplement the text book by material obtained from the industries and business houses of the locality in which his work is situated.

Business English

Required in the Normal Course during the first year; one half evening each week. Students of other courses may elect this, with the consent of the Dean, as a substitute for one of the required subjects.

In the treatment of this subject the simpler principles of composition are thoroughly studied in their application to the various kinds of writing used in modern business, especially the business letter. The chief aim will be to develop a command of clear and vigorous English for commercial purposes. Available text books on Business English will be discussed, and frequent reference made to the problems presented by the teaching of this subject in schools.

Penmanship

Required in the Normal Course during the third year; one evening each week during the first term and one half evening each week during the second term.

The purpose in giving this subject is to train students to execute and teach muscular movement penmanship. Graduates of the Normal Course who may desire to secure positions in the commercial departments of high schools are very likely to be called upon to teach muscular movement penmanship. This can be done effectively only by one who can demonstrate as well as give verbal instructions. Students are not inspired by an instructor of penmanship who is unable to execute copies skillfully.

School Room Organization and Administration

Required in the Normal Course during the second term of the third year; one half evening each week.

This subject will be treated in lectures covering the organization and administration of commercial high schools, commercial departments of high schools, and private commercial schools.

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Principles of Education

Required in the Normal Course during the second term of the third year; one evening each week.

A study of the historic conceptions of education as they contribute to the formulation of principles of education in the present. The biological, psychological, and social factors in the educational situation will be analyzed and related, both for their cultural value and in giving insight into the school as an institution, and for their practical worth in formulating fundamental principles.

The second part will treat of the problems subject to investigations in the organization and administration of the public school systems of the United States, in comparison with similar institutions in Germany, France, and Great Britain, particularly in the commercial field.

Description of Elective Subjects in the Business Administration Course

Buying

Required in the second year in the regular programme of the Business Administration Course; one evening each week during the second term. Students who desire to specialize in Buying are permitted to take advanced work in this subject during the second term of the third year. It is believed that the training of a successful buyer should include a thorough knowledge of the principles of publicity and selling, or in other words, the principles which govern scientific distribution. It is also believed that a buyer should understand the general principles of commercial credits in order to more fully understand his relations with those from whom he purchases. Hence the reason for requiring those who desire to specialize in buying to take the regular work in publicity, selling, and commercial credits.

This subject will be presented in eighteen lectures by men of wide experience as buyers for different classes of business. The first two lectures deal with the functions of the buyer in modern business administration, and the fundamental principles which are more or less general to the purchasing department of every business. These are followed by four series of lectures, of four lectures each, each series dealing with a different line of business; *e. g.*, manufacturing, wholesaling and department stores. The following outline will convey some idea of the scope of the lectures: the organization and administration of a purchasing department; the relation of the purchasing department to the other departments of a business organization; the records of a purchasing department, including quotations received, catalogs of commodities dealt in, correspondence, orders placed, etc.; a study of the demands of the trade served, in order to buy accordingly; the science of merchandizing; traffic rates, trade discounts and cash discounts, in their relation to the purchasing department; importing, and a study of foreign markets; market conditions and their effect upon prices; quality tests; the evils of over-stocking and under-stocking.

Reference reading is required, and students are required to prepare themes bearing upon various topics assigned by the lecturers.

Publicity

Required in the third year in the regular programme of the Business Administration Course; one evening each week during the first term. Students who desire to specialize in publicity are permitted to elect advanced work in this subject during the second term of the third year.

A knowledge of the relative value and importance of advertising, and the underlying principles of scientific distribution through publicity and proper

DESCRIPTION OF SUBJECTS

selling methods, are matters of vital importance to men who choose a business career.

There are excellent opportunities open to men properly fitted to take positions in the advertising departments of large mercantile and manufacturing establishments. The successful advertising man must have a particularly broad knowledge of business affairs as well as a keen insight into human nature. The former is provided for in the programme of the Business Administration Course. It affords a broad practical training in these subjects with which the advertising man's work is so closely correlated.

The subject of Publicity is presented in eighteen lectures by men of broad experience in advertising. The first two lectures deal with the development of advertising in the United States. These are followed by four series of lectures, of four lectures each. The first of these series deals with proof reading, the preparation of manuscript, the different kinds of type, paper, cover stock, binding, etc., and such other technical matters as relate to the preparation of folders, pamphlets, booklets, catalogs, etc. Various specimens are studied and discussed, and students are required to prepare written work, correct proof, estimate the cost of different kinds of pamphlets, booklets, etc. The second series deals with retail distribution, covering the methods and media in retail advertising, the preparation of copy, the relation of the advertising department to the buying and selling departments, the conduct of special advertising campaigns, the methods employed in measuring advertising results, and the necessity for studying the public mind and trade conditions. The third series treats of national advertising, the study of national media, the preparation of copy, the necessity of securing co-operation from the selling department, the reason why national advertising is gaining in popularity, and the important part which this class of advertising is playing in maintaining high standards, and reducing much waste in ineffectual and useless advertising. Written work in the form of copy, outlines, etc., will be required from those taking these lectures. The fourth series deals with various publicity problems, including a study of the most effective methods of conducting certain types of publicity campaigns through means of form letters, circulars, pamphlets, etc.; the organization and administration of a publicity department, and the mechanical devices used in printing, duplicating, binding, and folding advertising matter. Different types of machines for duplicating, addressing, sealing, affixing postage stamps, etc., are exhibited and demonstrated.

Commercial Credits

Required in the third year in the regular programme of the Business Administration Course; one half evening each week during the first term. Students who desire to specialize in Commercial Credits are permitted to elect advanced work in this subject during the second term of the third year.

A credit man should possess a thorough knowledge of business law and accounting, and he should be familiar with the functions of the buying, publicity and selling departments of the organization in which he is employed in that he may fully appreciate the relations of his work to these administrative departments, and in order that he may have the proper preparation for administrative positions to which he may be advanced. The Business Administration Course offers an ideal preparation to those who desire to become credit men. The credit department in modern business organization is a matter of comparatively recent origin, and the demand for properly trained credit men should act as an inducement to those who are willing to prepare for this very desirable occupation.

This subject will be presented in eighteen lectures by four credit men of broad experience. The first six lectures will deal with the more general principles of commercial credits, such as the organization and administration of a credit department; the records of a credit department, the mercantile agency—

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its functions and operations; the relation of the credit department to the selling and collection departments; instruments of collection; opening new accounts; the use of law lists; compiling credit statistics; insurance—its importance in credit transactions; the deciphering of financial statements; trade and cash discounts the advantage and disadvantages of cash discounts; the consideration of local conditions; the effects of crises on credits; forecasting disastrous elements in credit granting, etc. These will be followed with three series of four lectures each, each series dealing with a different class of business,—banking, wholesaling, and department store.

Reference reading is assigned, and students are required to prepare papers on various phases of the work of credit men.

Selling

Required in the third year in the regular programme of the Business Administration Course; one evening each week during the second term.

This subject will be presented in a series of eighteen lectures, the first six of which will be devoted to the elements of salesmanship. These lectures will cover the kinds of salesmanship—personal, by correspondence and by advertising; kinds of salesmen—wholesale, retail and canvassers; factors of sales—customer, commodity and salesman; and the more general elements which enter into the effecting of sales. These lectures will be followed by three series of four lectures each, each series dealing with the organization and administration of the selling department of a different class of business.

The purpose of this subject is to train men for positions as sales managers, or assistant sales managers, and not as field men or floor salesmen.

Spanish Courses

Three courses are offered in Spanish, as described hereunder, and may be elected by regular students of the School of Commerce and Finance, and also by special students.

There is an increasing demand for secretaries, buyers and salesmen, who are able to speak and write the Spanish language and to translate English into Spanish and vice versa.

Those who desire to become efficient in Spanish should take the three courses offered. Those who wish merely to be able to write commercial Spanish may acquire a very fair working knowledge of the subject by electing Spanish I and III. One may elect one or more of the Spanish courses regardless of whether he is enrolled in the School of Commerce and Finance for other courses.

Spanish I

This subject treats of the elementary principles of Spanish grammar, and aims to develop, in the more simple form, facility in sight reading, translation and composition.

Spanish II

This is a continuation of Spanish I. It deals with advanced grammar and composition. The latter part of this course consists in reading and criticising modern literature, assigned collateral reading with written analyses and conversational exercises.

Spanish III

This course deals almost entirely with commercial Spanish. It covers practice in reading, writing, translating and conversing, in commercial subjects; commercial correspondence, business terms, Spanish business customs, etc. It is designed to develop a broad knowledge of Spanish commercial terms, and a free, easy style of expression suitable for business purposes.

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List of Students

1911-1912

Anderson, Peter L.	West Medford
Andrew, William S.	West Somerville
Anness, Howard T.	Cliftondale
Badger, Fred L.	Quincy
Bailey, Edward A.	Arlington
Baldwin, Edwin C.	West Somerville
Bamberg, Henry F.	Dorchester
Barnard, Frederic C.	Cambridge
Barr, George R.	Waltham
Batchelder, Arthur P.	Peabody
Bearse, Lawrence S.	Roxbury
Bernstein, Jacob M.	Roxbury
Bowmar, Thomas W.	Dorchester
Brown, Frederic S.	Allston
Bruce, Robert	Roxbury
Bumstead, John J.	Charlestown
Burton, T. H.	Winchester
Cairns, Douglas (B.S.)	Roxbury
Calder, Philip R.	West Somerville
Carlson, Frank I.	Everett
Cary, Arthur W.	Malden
Christenson, Einar N.	Arlington
Clark, Wilfred A.	Medford
Clarkson, George S.	Roxbury
Coffin, Melbourne E.	Watertown
Cohen, Irving	Worcester
Compton, William H.	West Lynn
Cooper, William S.	Medford
Cornell, Charles H.	Chelsea
Cushing, Benjamin	Dorchester
Cushing, William V.	Newton Upper Falls
Davison, Frederick W.	Dorchester
Delano, A. H. (A. B.)	Dorchester
Delury, Timothy J.	Dorchester
Dolliff, Herbert L.	Malden
Duffey, Frank	Boston
Duggan, Edward J.	Salem
Eames, Elbridge J.	Newton
Edwards, C. B.	Haverhill
Elliott, H. C. (A. B.)	Jamaica Plain
Esterberg, William L.	Reading
Falconer, William G.	Boston
Fallon, Herbert	Dorchester
Ferngold, Harry J.	E. Boston
Finn, James A.	Somerville
Fraser, Herbert C.	Newton
Freeman, Harold P.	Roxbury
Friedberg, Daniel	Roxbury
Friedman, Joseph	Worcester

LIST OF STUDENTS—1911-1912

Fuller, Benjamin W.	East Milton
Geller, Samuel (A. B.)	Boston
Gilley, Charles R.	West Somerville
Glassman, Ira	Somerville
Goldberg, Eli	Roxbury
Gray, W. C.	Boston
Grodberg, Joseph M.	Worcester
Grossman, E. H. Paul (A. B.)	Jamaica Plain
Guiney, Jr., John J.	North Cambridge
Hale, William E.	Walpole
Hallberg, Eric O.	Dorchester
Harrison, James W.	Boston
Harte, William A.	Cambridge
Hartwell, Herbert F.	Cambridge
Harvey, Guy L.	Boston
Hatch, Walter G. (A. B.)	Boston
Hawes, Edgar P.	Roslindale
Henderson, James F.	Cambridge
Hodge, George E.	So. Billerica
Hogan, H. Warren	Malden
Holmes, Merton I. (B. S.)	Lynn
Hubbard, Fred W.	Newton
Hunter, Robert	South Boston
Hydren, Nils M.	Brookline
Jacques, R. W.	West Lynn
Keating, Raymond O.	Woburn
Kent, Richard E. (LL.B.)	E. Boston
Kimball, Francis W. (LL.B.)	Chelsea
Klein, Herman E.	West Roxbury
Kneppenber, Jr., Henry C.	Revere
Kuebler, Joseph A.	Winthrop Beach
Landerman, John D.	Roxbury
Layton, Frederick S.	Ellis, Mass.
Learoyd, John S. (A.B.)	Danvers
Lerned, C. Henry	Winthrop
Lewis, Harry	Boston
Lord, M. F.	Dorchester
Loud, Harry C.	Roxbury
Lyons, Henry F.	Dorchester
Lyons, Thomas A.	Dorchester
Lyons, William J.	Boston
McCarthy, John N.	Natick
McDermott, Frank J.	Cambridge
McGowan, Edward L.	Cambridge
MacGregor, Archibald	Hyde Park
McManus, John F.	Peabody
Magce, William J.	Bondsville
Mann, Harvard L.	Dorchester
Mansfield, William A.	Boston
Markowitz, Alfred J.	Roxbury
Merrill, Herbert C.	Somerville
Miller, Willard A.	Malden
Mitchell, Ernest G.	Lynn
Mitchell, Harold N. (A.B.)	Boston
Montgomery, John	Boston
Moore, Frederic E.	West Somerville
Murphy, Henry H.	Roxbury
O'Connell, Charles F.	Brockton

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Orpine, Albert C.	Malden
Owers, Robert C.	Boston
Page, Lauris I.	Boston
Parsons, Harold J.	Allston
Patterson, Howard S.	Mattapan
Pearson, A.	Dorchester
Pegrum, Vincent F.	Somerville
Perkins, Carl A. (A.B.)	Hampton, N. H.
Perkins, Ralph S.	Melrose Highlands
Pihlerantz, William H.	Medford
Rich, Isaac	Roxbury
Rockett, James F.	Boston
Ryder, Ralph H.	Malden
Sapers, Maurice	Boston
Scholz, E. Paul	Medford
Shapiro, Harry	Revere
Shea, Bart. J.	Salem
Smith, Charles P.	Roxbury
Smith, William D.	Dorchester
Solomont, James	Roxbury
Spark, Dale M.	Peabody
Spinney, Walter F.	Allston
Spinoza, Maurice B.	Roxbury
Stanton, Ray C.	Whitman
Stearns, Charles E.	Somerville
Stetson, Frank O.	Newton
Stetson, Ralph G.	Boston
Stinson, William C.	Roxbury
Sylvester, Dana S. (LL.B.)	Brookline
Taylor, Robert M.	West Somerville
Thomas, Harry W.	Melrose
Thornquist, J. A.	Tufts College
Trumbull, Edward O.	Lynn
Tucker, Fred W.	Newton Center
Vatcher, Joseph R.	Lynn
Waldstein, Hyman S.	Boston
Walker, Russell A.	Peabody
Waters, Chester C. (A.B., Ph.D.)	
Watson, K. F.	Gloucester
Wheeler, William R.	Boston
Widger, John R.	Boston
Wilkins, William A.	Boston
Wilson, George A.	Boston
Winn, William A.	Arlington
Wood, Leland D.	Taunton
Zuch, William J.	Boston

